

VPDES PERMIT FACT SHEET

This document gives pertinent information concerning the reissuance of the VPDES permit listed below. This permit is being processed as a **Major, Municipal** permit. The effluent limitations contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et.seq. The discharge results from the operation of a proposed 4.0 MGD publicly owned wastewater treatment plant consisting of: Dual sequencing batch reactors with equalization basin, filtration unit, ultra violet light disinfection facilities, re-aeration facilities, and dual aerobic digesters.

This permit action consists of limiting pH, CBOD₅, total suspended solids, total kjeldahl nitrogen (TKN), *E. coli* and dissolved oxygen; including special conditions regarding alternate disinfection, compliance reporting, control of significant dischargers, whole effluent toxicity testing, and other requirements and special conditions.

SIC Code: 4952

1. Facility Name and Location:
Rohoic Creek Wastewater Treatment Plant
Near the intersection of US Route 460 and Rawlings Lane
Petersburg, VA 23803
2. Permit No. VA0092274
Existing Permit Effective Date: August 22, 2008
Existing Permit Expiration Date: August 21, 2013
3. Owner Name and Address:
Dinwiddie County Water Authority
23008 Airpark Drive
Petersburg, VA 23803
Owner Contact:
Name: Robert B. Wilson, P.E.
Title: Executive Director
Telephone No.: 804-861-0999
4. Application Complete Date: October 31, 2012
Permit Drafted By: Fred M. Wyatt, SWRO Date: February 19, 2013
Reviewed By: Curt Linderman Date: March 8, 2013
Kyle Winter Date: March 26, 2013
Public Comment Period Dates: May 1, 2013 to 11:59 pm on May 31, 2013.
5. Receiving Stream Name: Hatcher Run
River Mile: 5AHRA008.36
River Basin: Chowan and Dismal Swamp Basin
Subbasin: Chowan
Section: 2b
Class: VII
Special Standards: None
Latitude: 37°09'12"N
Longitude: 77°31'01"W

7-Day, 10-Year Low Flow (7Q10): 0.024 MGD
1-Day, 10-Year Low Flow (1Q10): 0.019 MGD
30-Day, 10-Year Low Flow (30Q10): 0.067 MGD
Harmonic Mean Flow (HM): Undeterminable
7Q10 High Flow: 2.6 MGD (Jan. – April)
1Q10 High Flow: 1.9 MGD (Jan. - April)
30Q10 High Flow: 5.0 MGD (Jan. – April)
(See Attachment 3 for Stream Flow Information)
Tidal? No

On 303(d) list? Yes (See Item # 13 below)
6. Operator License Requirements: Class II

VPDES PERMIT FACT SHEET
PAGE 2

7. Reliability Class: II
8. Permit Characterization:
☐ Private ☐ Federal ☐ State ☒ POTW ☐ PVOTW
☐ Possible Interstate Effect ☐ Interim Limits in Other Document
9. Attachment 1 includes a schematic of the wastewater treatment system.

Discharge Description			
OUTFALL NUMBER	DISCHARGE SOURCE (1)	TREATMENT (2)	FLOW (3)
001	Proposed primarily residential with some commercial and industrial received	See Page 1 above, first paragraph	4.0 MGD

(1) List operations contributing to flow (2) List treatment units (3) Design flow

10. Sewage Sludge Use or Disposal: The sludge disposal plan consists of transporting the dewatered sludge to the Atlantic Waste Disposal Landfill in Sussex County.
11. Discharge Location Description: The facility will discharge to Hatcher Run directly downstream of Jordan Lake Dam under the Route 1 Bridge. See attached Sutherland Topographic Map (Number 070A) (Attachment 2).
12. Material Storage: This is a proposed facility. Material storage information is not available at this time.
13. Ambient Water Quality Information: During the 2010 and draft 2012 305(b)/303(d) Water Quality Assessments, Hatcher Run was impaired for the fish consumption use due to a VDH advisory for mercury and for the aquatic life use due to naturally low dissolved oxygen within the upper Rowanty Creek watershed. It was assessed as fully supporting the recreation and wildlife uses. No TMDL has been developed for this section of Hatcher Run. See Attachment 7 for the 303(d) TMDL Fact Sheet.

Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, are now classified as Class VII swamp waters. Note that at the time of the 2008 permit issuance, the receiving waters were designated as Class III waters. This 2013 permit and fact sheet have been revised to reflect the change in classification.

14. Antidegradation Review & Comments: Tier I (X) Tier II () Tier III ()

The State Water Control Board's Water Quality Standards includes an antidegradation policy (9 VAC 25-260-30). All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The antidegradation review begins with a Tier determination. The Hatcher Run at the proposed discharge point has been historically deemed as a Tier 1 water body and antidegradation has not been applied. The stream is impaired as described in Item #13 above.

15. Site Inspection: On January 28, 2008, Jennifer Palmore and Kelly Harris for the PRO Water Planning unit visited the location of the proposed plant. The visit was conducted in conjunction with the stream assessment used in Jennifer Palmore's Stream Sanitation Analysis. During the site visit, Ms. Palmore noted that the stream is backwatered by a low beaver dam over which water was flowing. See Attachment 4 for more information on the site visit.

VPDES PERMIT FACT SHEET
PAGE 3

16. Effluent Screening & Limitation Development: See Attachment 5 for Storet Stream Data and Metals Specific Values for Water Quality Criteria Monitoring.

Basis for Limits:

1. Water Quality Based Limits

Ammonia Nitrogen: Since TKN is limited to 3.0 mg/l and historical effluent data does not exist, no ammonia limitation is necessary.

pH: During the 2008 permit issuance, the receiving water was classified as a Class III waters and per 9 VAC 25-260-50 of the Virginia Water Quality Standards, pH was limited to a minimum of 6.0 and maximum of 9.0 S.U. Since the 2008 permit reissuance, the receiving water has been reclassified as a Class VII waters for which the Virginia Water Quality Standards establish a minimum pH of 3.7 and maximum of 8.0 S.U. Therefore to avoid backsliding, the minimum pH limitation of 6.0 S.U. from the 2008 permit has been carried forward in this 2013 permit reissuance. The maximum pH limitation has been revised to 8.0 S.U. in accordance with the water quality standard for pH in Class VII waters.

***E. coli*:** Section 9VAC25-260-170.A of the Water Quality Standards requires a monthly geometric mean of 126 CFU/100 ml in all freshwater streams. All discharges with ultraviolet or other alternate (to chlorination) disinfection must have *E. coli* effluent limitations and monitoring requirements. EPA policy requires that all major municipal facilities and all municipal facilities discharging into streams with approved TMDLs have *E. coli* permit limitations and monitoring requirements.

cBOD₅, TKN, Dissolved Oxygen (DO): In the 2008 issuance, the discharge was modeled into Class III or non-tidal waters with the following limits:

Design Flow: 4.0 MGD
CBOD₅ = 9 mg/l, monthly average
TKN = 3.0 mg/l, monthly average
D.O = 5.0 mg/l, minimum

While the receiving stream has been reclassified as Class VII (swamp waters), the modeling from the 2008 permit is still valid.

Toxics: Effluent must meet the water quality standards for discharges to Class VII or swamp waters. Mixing zones are not allowed unless the discharger provides actual data that demonstrates the size of the mixing zone and the dilution attained. The quantification levels for the metals in Attachment A are actually specific target values. Since no mixing zones are allowed, chronic water standards were used (except for silver) for the target values since they are the most restrictive, using a BPJ mix hardness (where applicable) of 25 mg/L.

Total Residual Chlorine (TRC) for alternate disinfection (not included in the table above): PART I. Section B. of this permit contains provisions for alternate disinfection in the form of chlorination. Since no mixing is allowed, the effluent must meet the water quality standards of .019 mg/l for acute and 0.011 mg/l for chronic. Using STAT.exe, the following effluent limits were determined:

TRC = 7.0 µg/L, monthly average
TRC = 7.4 µg/L, weekly average

2. Federal Effluent Guidelines

Total Suspended Solids (TSS): Municipal wastewater treatment works are required to meet secondary treatment requirements. As promulgated in Federal Regulation 40 CFR Part 133, secondary treatment for TSS is defined as 30 mg/l for a monthly average and 45 mg/l for a weekly average.

VPDES PERMIT FACT SHEET
PAGE 4

Basis for Effluent Limitations: 4.0 MGD Design Flow

PARAMETER	BASIS FOR LIMITS*	DISCHARGE LIMITS				MONITORING REQUIREMENTS	
		MONTHLY AVERAGE	WEEKLY AVERAGE	MINIMUM	MAXIMUM	FREQUENCY	SAMPLE TYPE
Flow	NA	NL	NA	NA	NL	Continuous	Totalizing Indicating & Recording
pH	2	NA	NA	6.0 SU	8.0 SU	1 per Day	Grab
cBOD ₅	1,3	9 mg/L 140 kg/d	14 mg/L 210 kg/d	NA	NA	1 per Day	24 Hour Composite
Total Suspended Solids	1	30 mg/L 450 kg/d	45 mg/L 680 kg/d	NA	NA	1 per Month	24 Hour Composite
Total Kjeldahl Nitrogen (TKN)	2,3	3.0 mg/L 45 kg/d	4.5 mg/L 68 kg/d	NA	NA	1 per Day	24 Hour Composite
<i>E. coli</i> (n/100 ml)	2	126**	NA	NA	NA	1 per Day***	Grab
Dissolved Oxygen	2,3	NA	NA	5.0 mg/L	NA	1 per Day	Grab
Total Residual Chlorine****	2,5	7.0 µg/L	7.4 µg/L	NA	NA	1 per 2 Hours	Grab

- *1. Federal Effluent guidelines
- 2. Water Quality-based Limits:
- 3. Best Engineering Judgement
- 4. Best Professional Judgement
- 5. Other (e.g. wasteload allocation model)

**Geometric Mean

***Between 10 a.m and 4 p.m.

**** If chlorination is chosen as a disinfection method, total residual chlorine (TRC) shall be limited and monitored by the permittee as outlined below:

- The permittee shall monitor the total residual chlorine (TRC) at the outlet of each operating chlorine contact tank, once every 2 hours by grab sample.
- No more than thirty six (36) of all samples for TRC taken at the outlet of each chlorine contact tank shall be less than 1.0 mg/l for any one calendar month.
- No TRC sample collected at each outlet of the chlorine contact tank shall be less than 0.60 mg/l.
- If dechlorination facilities exist, the samples above shall be collected prior to dechlorination.
- If chlorination is chosen as a disinfection method, effluent TRC shall be limited and monitored, following dechlorination, by the permittee as specified below:

	Monthly Average	Weekly Average	Frequency	Sample Type
TRC (µg/L) [DMR#005]	7.0	7.4	1 per 2 Hours	Grab

- Basis for Sludge Use & Disposal Requirements: VPDES Permit Regulation, 9VAC25-31-100 P; 220 B.2.; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.
- Antibacksliding Statement: All limitations are the same or more stringent than limitations in the 2008 permit.

19. Compliance Schedule: NA.

20. Special Conditions:

PART I.B. Special Condition – Alternate Disinfection - Total Residual Chlorine (TRC) Effluent Limitations and Monitoring Requirements

Rationale: This special condition is only applicable if chlorine disinfection is used in place of ultraviolet light or other alternative disinfection. These limitations and monitoring are required by the Water Quality Standards 9 VAC 25-260-170 – Bacteria; other recreational waters. Also 40 CFR 122.41(e) requires the permittee, at all times, to properly operate and maintain all facilities and systems of treatment in order to comply with the permit. This insures proper operation of chlorination equipment to maintain adequate disinfection.

PART I.C. Special Condition - Compliance Reporting

Rationale: Authorized by VPDES Permit Regulation, 9VAC25-31-190J4 and 220 I. This condition is necessary when pollutants are monitored by the permittee and a maximum level of quantification and/or a specific analytical method is required in order to assess compliance with a permit limit or to compare effluent quality with a numeric criterion. The condition also establishes protocols for calculation of reported values.

PART I.D. Special Condition – Control of Significant Dischargers

Rationale: VPDES Permit Regulation, 9VAC25-31-730 through 900, and 40 CFR part 403 require certain existing and new sources of pollution to meet specified regulations.

PART I.E. Special Condition – Whole Effluent Toxicity Testing

Rationale: VPDES Permit Regulation, 9 VAC25-31-210 and 220 I, requires monitoring in the permit to provide for and assure compliance with all applicable requirements of the State Water Control Law and the Clean Water Act. See Attachment 6 for the Whole Effluent Toxicity Testing Evaluation.

PART F. Other Requirements and Special Conditions:

1. 95% Capacity Reopener

Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 4 for all POTW and PVOTW permits

2. Indirect Dischargers

Rationale: Required by VPDES Permit Regulation, 9VAC25-31-200 B 1 and B 2 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.

3. CTC, CTO Requirement

Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC25-790.

4. Operation and Maintenance Manual Requirement

Rationale: Required by the Code of Virginia § 62.1-44.19: Sewage Collection and Treatment Regulations, 9VAC25-790; VPDES Permit Regulation, 9VAC25-31-190 E.

5. Licensed Operator Requirement

Rationale: The VPDES Permit Regulation, 9VAC25-31-200 C and the Code of Virginia § 54.1-2300 *et seq*, Rules and Regulations for Waterworks and Wastewater Works Operators and Onsite Sewage System Professionals (18VAC160-20-10 *et seq.*), require licensure of operators.

6. Reliability Class

Rationale: Required by the Sewage Collection and Treatment Regulations, 9 VAC25-790 for all municipal facilities.

7. Facility Closure Plan

VPDES PERMIT FACT SHEET
PAGE 6

Rationale: State Water Control Law § 62.1-44.19. This condition is used to notify the owner of the need for a closure plan where a treatment works is being replaced or is expected to close.

8. Section 303(d) List (TMDL) Reopener

Rationale: Section 303(d) of the Clean Water Act requires the total maximum daily loads (TMDLs) be developed for streams listed as impaired. This special condition is to allow the permit to be reopened if necessary to bring it in compliance with any applicable TMDL approved for the receiving stream. The reopener recognizes that, according to Section 402(o)(1) of the Clean Water Act, limits and/or conditions may be either more or less stringent than those contained in the permit. Specifically, they can be relaxed if they are the result of a TMDL, basin plan, or other wasteload allocation prepared under Section 303 of the Act.

9. Sludge Reopener

Rationale: Required by VPDES Permit Regulation, 9VAC25-31-220 C for all permits issued to treatment works treating domestic sewage.

10. Sludge Use and Disposal

Rationale: VPDES Permit Regulation, 9VAC25-31-100 P; 220 B.2.; and 420 through 720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on sludge use and disposal practices and to meet specified standards for sludge use and disposal.

11. Water Quality Criteria Monitoring

Rationale: State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems, or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit.

12. Water Quality Criteria Reopener

Rationale: VPDES Permit Regulation, 9VAC25-31-220 D requires effluent limitations to be established which will contribute to the attainment or maintenance of water quality criteria

13. Materials Storage and Handling

Rationale: Rationale: 9 VAC 25-31-50 A prohibits the discharge of any wastes into State waters unless authorized by permit. Code of Virginia §62.1-44.16 and 62.1-44.17 authorizes the Board to regulate the discharge of industrial waste or other waste.

14. Discharge Monitoring Reporting for New Facilities

Rationale: This condition is designed to clarify monitoring and reporting requirements before the commencement of discharge. Unless notified in writing by the permittee, the agency will regard the commencement of discharge to be equal to the first day of the first monitoring period for which a discharge is reported.

PART II, Conditions Applicable to All Permits

Rationale: VPDES Permit Regulation, 9 VAC 25-31-190 requires all VPDES permits to contain or specifically cite the conditions listed.

21. Changes from the 2008 permit contained in the reissuance permit:

The TRC limitations in Part I.B, included in case chlorination is used as an alternative form of disinfection, have been revised. In the 2008 permit limitation a monitoring frequency of once per day was used in the statistical analysis to derive the TRC limitation. Since then, agency guidance (GM10-2003) has been revised to recommend a monitoring frequency of 1 per 2 hours for facilities with a design capacity of greater than 2.0 MGD. Upon analysis with the revised monitoring frequency during this 2013 reissuance, a more stringent limitation is necessary to protect water quality.

This permit was drafted using guidance provided in the January, 2010 permit manual, which is revised on a

VPDES PERMIT FACT SHEET
PAGE 7

continuous basis, resulting in minor changes to permit requirements and conditions.

An up-dated Attachment A, Water Quality Criteria Monitoring, is included in the Reissuance permit. Monitoring results must be submitted to DEQ within 180 days of commencement of discharge.

The Whole Effluent Monitoring (Toxics Monitoring Program) special condition has been updated to reflect swamp water discharge end points.

22. Variances/Alternate Limits or Conditions: None
23. Regulation of Users: 9 VAC 25-31-280 B 9 – Not Applicable – The proposed facility is municipally owned.
24. Public Notice Information required by 9 VAC 25-31-280 B:

All pertinent information is on file and may be inspected, and copied by contacting:

Ms. Jaime Bauer
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road, Glen Allen, VA 23060
Telephone: (804) 527-5015
E-mail: jaime.bauer@deq.virginia.gov

DEQ accepts comments and requests for public hearing by hand delivery, e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requester, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. A public hearing may be held, including another comment period, if public response is significant, based on individual requests for a public hearing, and there are substantial, disputed issues relevant to the permit. The public may review the draft permit and application at the DEQ Piedmont Regional Office by appointment or may request copies of the documents from the contact person listed above. .

Public Notice Requirements: The legal ad announcing the public comment period was run in the *Dinwiddie Monitor* on May 1, 2013 and May 8, 2013. The comment period began on May 1, 2013 and ended at 11:59 pm on May 31, 2013.

25. Additional Comments:

Previous Board Action: None

Staff Comments:

- This project is *not* considered controversial.
- VPDES Permit No. VA0092274 for this facility was issued on August 22, 2008 with an expiration date of August 21, 2013.
- A permit fee is not required. The most recent annual maintenance fee of \$8,292 was paid on September 20, 2012 and is to be paid by October 1 of each year.
- This facility is not a participant in the Virginia Environmental Excellence Program.
- This facility has not yet been built and therefore only annual DMRs are required at this time. Upon issuance of a certificate to operate, the facility will be required to register for eDMR. This is consistent

VPDES PERMIT FACT SHEET
PAGE 8

with the treatment of other new or proposed municipal wastewater treatment facilities. Notification that eDMR registration will be required will be provided in the permit transmittal letter.

- This facility is not eligible for reduced monitoring because it is a new, proposed facility for which no monitoring data is yet available.
- Financial assurance does not apply to this facility because it is a publicly owned treatment works.
- In accordance §62.1-44.15:01.A.2, 9 VAC25-31-290.G.2 and GM11-005, the Crater Planning District Commission, the County Administrator, and the Chairman of the Board of Supervisors of Dinwiddie County were notified of the public comment period and sent the legal notice for the draft permit in a letter dated April 25, 2013. A memorandum was received from the planning district on April 26, 2013 stating that the proposal is in full accord with the Crater Planning District Commission's environmental policy directives and that they support the permit reissuance.
- This facility is subject to the VAR05 General VPDES Permit for Storm Water Discharges Associated with Industrial Activity (Sector T) because the design flow of the treatment plant is greater than 1.0 MGD. Discharges associated with industrial storm water at this site are *not* covered under this individual permit. Since this is a proposed facility, there are no activities currently occurring at this site that require an industrial storm water permit. Prior to commencement of discharge, the permittee is required to obtain coverage under the general permit for storm water discharges associated with industrial activity (VAR05) or demonstrate that they qualify for "no exposure certification."
- According to the attached printout from the Virginia Fish and Wildlife Information Service (VaFWIS), no T&E species have been confirmed in Hatcher Run within a two mile radius of this discharge. This facility is not on the list for T&E Coordination with the Virginia Department of Game and Inland Fisheries (DGIF) and the Department of Conservation and Recreation (DCR), the T&E Coordination Form was not sent to these agencies.

During the original issuance of this permit in 2008, screening for impacts to threatened and endangered (T&E) species was conducted via the following agencies: Department of Game and Inland Fisheries (DGIF), Department of Conservation and Recreation (DCR), and United States Fish and Wildlife Service (USFS). On the DGIF database, no confirmed hits were found for federal or state T&E species within a two mile radius of the outfall. The DCR screening revealed documentation of the Chowanoke crayfish (*Orconectes virginensis*) within the project vicinity; however, the species is not listed as threatened or endangered on the federal or state list. DCR recommended that a survey be performed. However, there are no legal requirements or requirements in the MOU between DCR and DEQ that require the permittee perform the study for the species of concern. In the USFWS screening, no confirmed hits were found in Dinwiddie County, although federally listed species were documented in adjacent counties. It is expected that the proposed facility discharge will pose a threat to those facilities in adjacent counties. See Attachment 8 for the T&E Species evaluation.

- This facility will be built in anticipation of the Fort Lee expansion. Currently, South Central Wastewater Authority (SCWA) services the northeastern section of Dinwiddie County. This proposed treatment plant will allow Dinwiddie County to serve those residential and industrial connections currently included in the contract with SCWA.
- In the original permit issuance in 2008, five riparian land owners and the local governing body were notified of the proposed discharge in accordance with Section 62.1-44.15:4 D of the State Water Control law. A phone call from one riparian landowner was received and addressed.
- Planning Conformance Statement: The discharge is not addressed in any planning document but will be included when the plan is updated.
- VDH Coordination: VDH was notified of the intent to reissue the VPDES permit by email dated February 19, 2013. A memo dated February 22, 2013 from VDH indicated that there are no public water supply

VPDES PERMIT FACT SHEET
PAGE 9

raw water intakes within 15 miles downstream of the discharge. Additionally, the City of Norfolk waterworks is located approximately 67 miles downstream of the discharge, and VDH recommended a minimum Reliability Class of II for the facility. The permit already includes a Reliability Class II requirement, therefore no changes were necessary in the permit.

- EPA Comments: The draft permit was sent to EPA for review on March 29, 2013 because this is a major, municipal facility. EPA responded in an email dated April 19, 2013 stating that EPA has no comments on the draft permit. The EPA Checklist is included in Attachment 9.
- Public Comments:

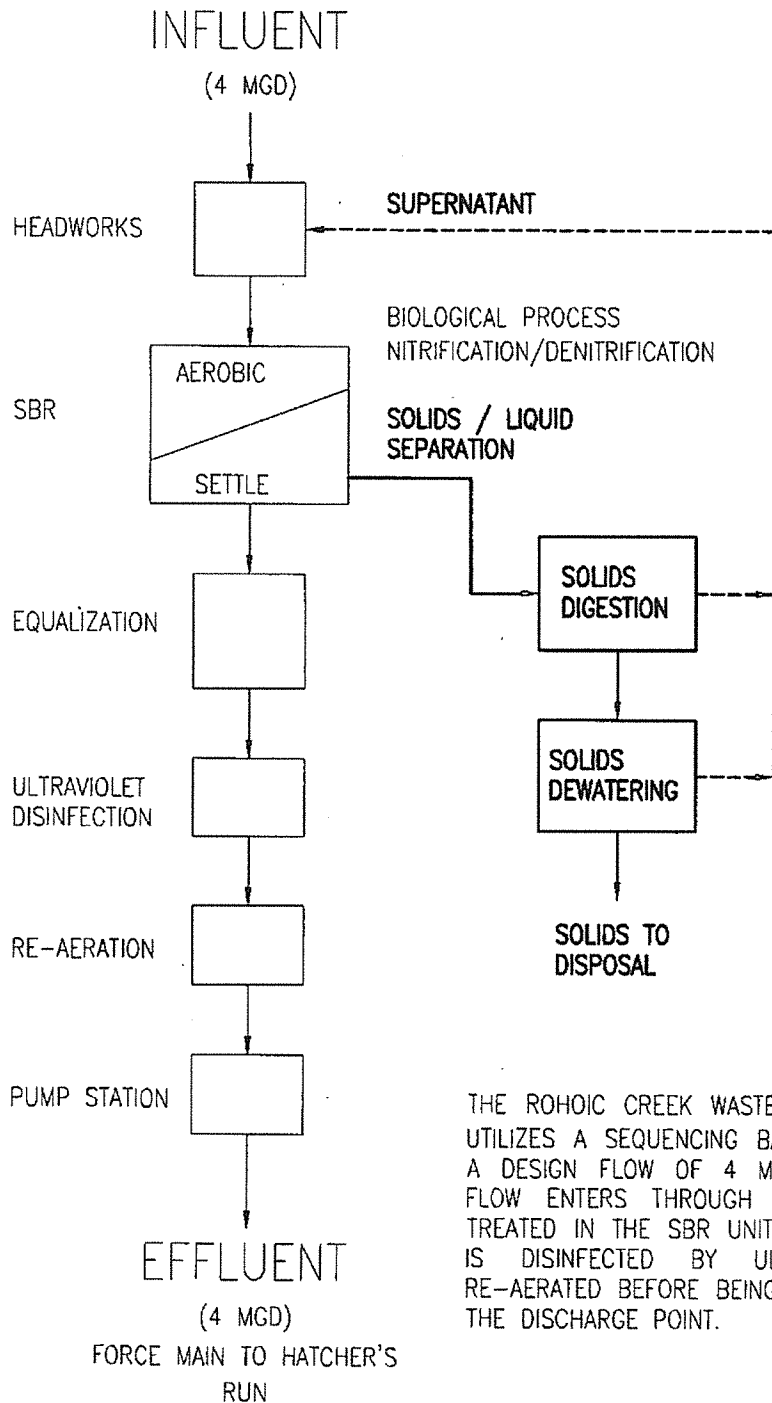
26. TMDL: See Item # 13 above.

27. Summary of attachments to this Fact Sheet:

1. Flow Diagram
2. Topographic Map
3. Stream Flows
4. Permit Limitations Development
5. Storet Stream Data and Metals Specific Target Values for Water Quality Criteria Monitoring
6. Whole Effluent Toxicity Analysis
7. 303(d) Fact Sheets TMDL
8. T&E Species
9. EPA Checklist

ATTACHMENT 1

Flow Diagram



AFTER THE SETTLING PHASE OF THE SEQUENCING BATCH REACTOR (SBR), SOLIDS ARE PUMPED TO SOLIDS DIGESTION AND TREATED WITH EXTENDED AERATION. THE TREATED SLUDGE IS DEWATERED AND DISCHARGED TO A DUMPSTER OR TRUCK THAT IS USED FOR LANDFILL DISPOSAL. SUPERNATANT FROM THE DIGESTION AND DEWATERING IS RETURNED TO THE HEAD OF THE PLANT.

THE ROHOIC CREEK WASTE WATER TREATMENT PLANT UTILIZES A SEQUENCING BATCH REACTOR (SBR) WITH A DESIGN FLOW OF 4 MILLION GALLONS PER DAY. FLOW ENTERS THROUGH THE HEADWORKS AND IS TREATED IN THE SBR UNIT. THE TREATED EFFLUENT IS DISINFECTED BY ULTRAVIOLET LAMPS THEN RE-AERATED BEFORE BEING SENT BY FORCE MAIN TO THE DISCHARGE POINT.

MALCOLM
PIRNIE

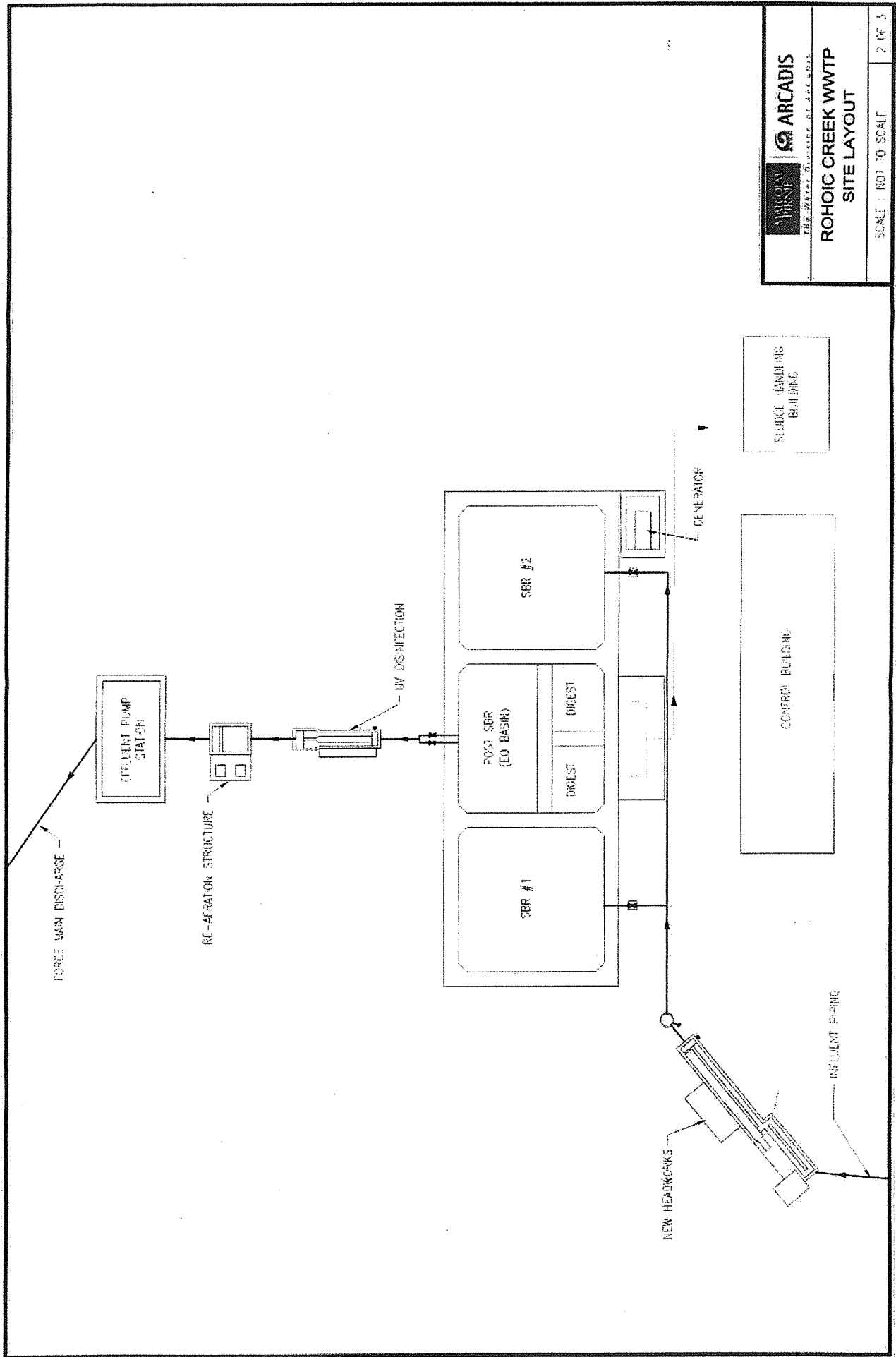
ARCADIS

The Water Division of ARCADIS

ROHOIC CREEK WWTP SLUDGE SCHEMATIC

SCALE: NOT TO SCALE

2 OF 3



ATTACHMENT 2
Topographic Map



0 1 2 3 4 5 km
 0 0.8 1.6 2.4 3.2 4 mi
 37° 09' 10"N, 77° 31' 02"W (NAD83/WGS84)
Jordan Lake, USGS Sutherland (VA) Quadrangle
 Projection is UTM Zone 18 NAD83 Datum
 M=-9.918
 G=-1.521



ATTACHMENT 3

Stream Flows

Wyatt, Frederick (DEQ)

From: Palmore, Jennifer (DEQ)
Sent: Monday, November 19, 2012 1:46 PM
To: Bauer, Jaime (DEQ)
Subject: RE: VA0092274 Flow Freq Request
Attachments: Data for Rohoic Creek WWTP.xlsx; 92274 - Hatcher Run Picture Rt 627 Stony Creek regression analysis.xlsx; 2010 Fact Sheets for Rohoic Creek WWTP.pdf; 2012 Fact Sheets for Rohoic Creek WWTP.pdf; 92274 Rohoic Creek WWTP FF 2012.docx

Attached is the flow frequency that you requested. If you have any questions, please let me know.

Thanks.

Jennifer

From: Bauer, Jaime (DEQ)
Sent: Thursday, November 08, 2012 12:48 PM
To: Palmore, Jennifer (DEQ)
Subject: VA0092274 Flow Freq Request

MEMORANDUM
DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office

SUBJECT: Flow Frequency Analysis Request
TO: Jennifer V. Palmore
FROM: Jaime Bauer
DATE: November 8, 2012

Please provide flow frequencies and applicable TMDL status for the outfall locations listed below. I have attached the following:

- a. A copy of the previous Flow Frequency Determination (if applicable).
- b. A copy of a topo map.

Facility Name: Rohoic Creek WWTP Permit Number: VA0092274

Permit Type: (mark all that apply)

Major X Minor Industrial Municipal X Other:

Permit Action: Issuance Reissuance X Modification

Current Permit Expiration Date: August 21, 2013

Topo Map: Sutherland Topo Map (070A)

Outfall Description:

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Rohoic Creek WWTP – VA0092274

TO: Jaime Bauer

FROM: Jennifer Palmore, P.G.

DATE: November 19, 2012

COPIES: File

The Dinwiddie County Water Authority's Rohoic Creek Wastewater Treatment Plant is permitted to discharge to Hatcher Run near Burgess, VA. The outfall will be located at rivermile 5AHRA008.36. Flow frequencies have been requested for use in developing effluent limitations for the VPDES permit.

The DEQ conducted several stream flow measurements on Hatcher Run at Route 627 near Five Forks, VA (#02046300) from 1998 to 2007. The measurements were correlated with the same day daily mean values from the USGS continuous record gauge on Stony Creek near Dinwiddie, VA (#02046000.) The measurements and daily mean values were plotted on a logarithmic graph and a best fit power trend line was plotted through the data points. The flow frequencies from the reference gage were plugged into the equation for the regression line to calculate the associated flow frequencies at the measurement site. Drainage area proportion was used to determine the flow frequencies at the discharge point. The flow frequencies for the gauge, measurement site, and discharge point are presented below. The regression analysis is attached.

Stony Creek near Dinwiddie (#02046000)

Statistical period = 1946-2003

Drainage Area = 113 mi²

1Q30 = 0.12 cfs	High Flow 1Q10 = 14 cfs
1Q10 = 0.26 cfs	High Flow 7Q10 = 18 cfs
7Q10 = 0.31 cfs	High Flow 30Q10 = 32 cfs
30Q10 = 0.77 cfs	HM = Undeterminable
30Q5 = 1.6 cfs	

Hatcher Run at Route 627 near Five Forks, VA (#02046265):

Drainage area = 6.77 mi²

1Q30 = 0.0033 cfs	High Flow 1Q10 = 0.80 cfs
1Q10 = 0.0080 cfs	High Flow 7Q10 = 1.1 cfs
7Q10 = 0.010 cfs	High Flow 30Q10 = 2.1 cfs
30Q10 = 0.028 cfs	HM = Undeterminable
30Q5 = 0.066 cfs	

Hatcher Run at discharge point:

Drainage Area = 25.04 mi²

1Q30 = 0.012 cfs (0.0079 MGD)	High Flow 1Q10 = 3.0 cfs (1.9 MGD)
1Q10 = 0.030 cfs (0.019 MGD)	High Flow 7Q10 = 4.0 cfs (2.6 MGD)
7Q10 = 0.036 cfs (0.024 MGD)	High Flow 30Q10 = 7.7 cfs (5.0 MGD)
30Q10 = 0.10 cfs (0.067 MGD)	HM = Undeterminable
30Q5 = 0.24 cfs (0.16 MGD)	

This analysis does not address any withdrawals, discharges, or springs influencing the flow of Hatcher Run between the discharge point and the measuring site. The high flow months are January through April.

During the 2010 and draft 2012 305(b)/303(d) Water Quality Assessments, Hatcher Run was impaired for the Fish Consumption Use due to a VDH advisory for mercury and for the Aquatic Life Use due to naturally low dissolved oxygen within the upper Rowanty Creek watershed. The fact sheets are attached. It was assessed as fully supporting of the Recreation and Wildlife Uses.

Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, are classified as Class VII swampwaters.

Water quality monitoring data from station 5AHRA010.94 is attached. The station is located on Hatcher Run at the Route 631 bridge and is approximately 2.58 miles upstream of the discharge.

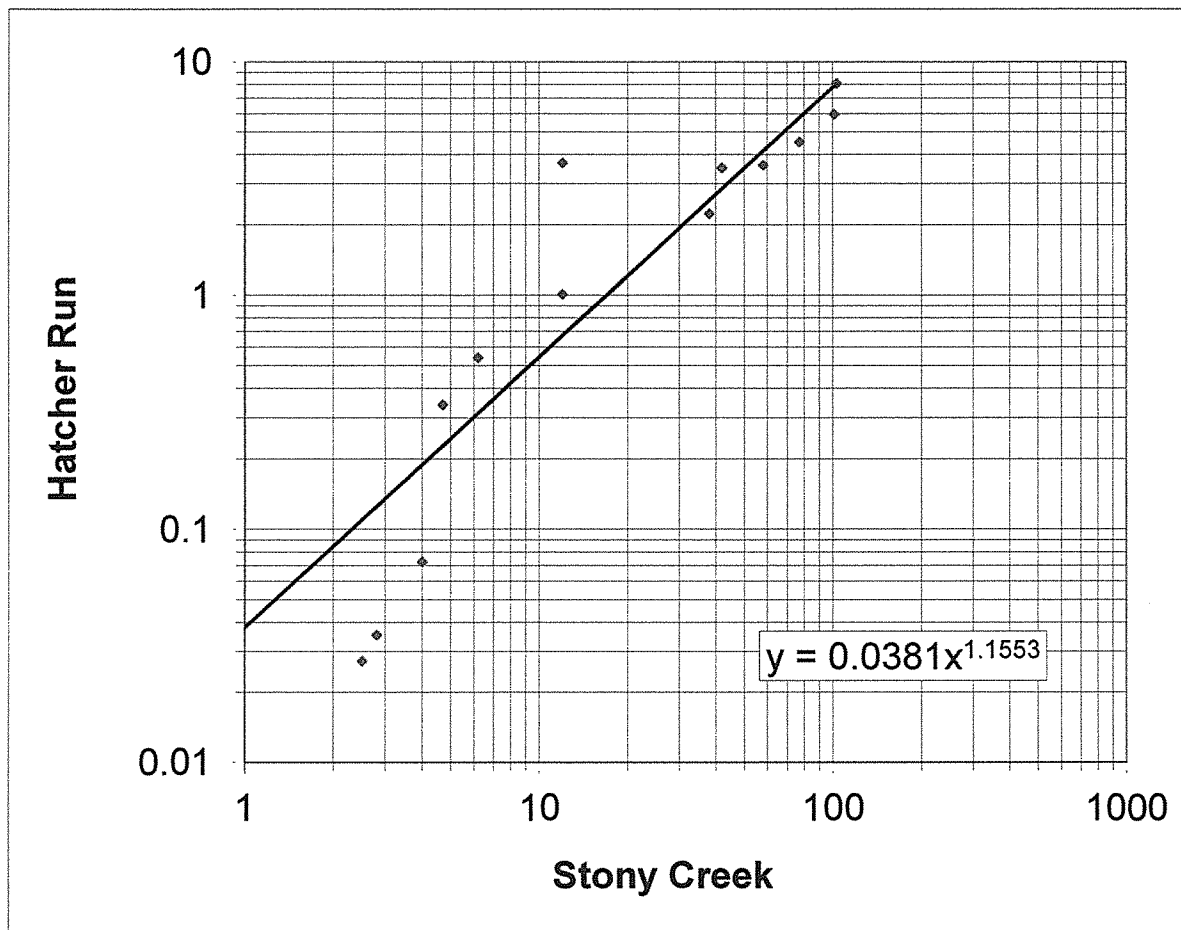
Hatcher Run was considered a Tier 1 water. Antidegradation was not applied during a 1977 modeling effort for the Picture Lake Campground STP, which included a portion of Hatcher Run.

The facility has not been addressed in any currently-approved TMDL.

If you have any questions concerning this analysis, please let me know.

Hatcher Run at Route 627, near Five Forks, VA #02046265
vs Stony Creek near Dinwiddie, VA #02046000

Regression Analysis



Flow Data (cfs)

Date	Stony	Hatcher
9/10/1998	2.5	0.027
12/9/1998	6.2	0.541
2/9/1999	42	3.50
6/22/1999	12	3.68
1/30/2007	77	4.52
2/22/2007	103	8.05
3/6/2007	101	5.94
4/5/2007	58	3.60
5/25/2007	38	2.23
7/16/2007	2.8	0.035
8/7/2007	12	1.01
9/12/2007	4.7	0.340
9/26/2007	4.0	0.072
10/11/2007	0.80	0.096

SUMMARY OUTPUT

<u>Regression Statistics</u>	
Multiple R	0.934
R Square	0.873
Adjusted R Square	0.862
Standard Error	0.949
Observations	14

Flow Frequencies (cfs)

Stony		Hatcher at Rt 627	Hatcher at 001
0.12	1Q30	0.0033	0.012
0.26	1Q10	0.0080	0.030
0.31	7Q10	0.010	0.036
0.77	30Q10	0.028	0.10
1.6	30Q5	0.066	0.24
14	HF 1Q10	0.80	3.0
18	HF 7Q10	1.1	4.0
32	HF 30Q10	2.1	7.7
—	HM	—	—
113	DA (mi ²) Jan-Apr	6.77	25.04

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY Piedmont Regional Office

4949-A Cox Road, Glen Allen, VA 23060-6296

804/527-5020

SUBJECT: Flow Frequency Analysis Request

TO: Jennifer V. Palmore

FROM: Jaime Bauer 

DATE: November 19, 2007

Please provide flow frequencies and applicable TMDL status for the outfall locations listed below. I have attached the following:

- a. A copy of the previous Flow Frequency Determination (if applicable).
- b. A copy of a topo map showing the location of each existing outfall & any new or proposed outfalls.

Facility Name: Rohoic Creek WWTP Permit Number: VA0092274

Permit Type: (mark all that apply)

Major ☒ Minor ☐ Industrial ☐ Municipal ☒ Other: ☐

Permit Action: Issuance ☒ Reissuance ☐ Modification ☐

Current Permit Expiration Date: NA

Topo Map: USGS Sutherland

Outfall Description:

1.	<u>001</u>	<u>N 37°09'10"</u>	<u>W 77°31'02"</u>	<u>Hatcher Run (at Jordon Lake)</u>
	<u>#</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Stream</u>
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	<u>#</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Stream</u>
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	<u>#</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Stream</u>
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	<u>#</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Stream</u>

Comments:

1.	<u>001</u>	<u>37° 09' 12"</u>	<u>77° 31' 01"</u>	<u>Hatcher Run</u>
	#	Latitude	Longitude	Receiving Stream
2.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	#	Latitude	Longitude	Receiving Stream
3.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	#	Latitude	Longitude	Receiving Stream
4.	<u> </u>	<u> </u>	<u> </u>	<u> </u>
	#	Latitude	Longitude	Receiving Stream

Comments:

This is for a permit reissuance of a facility not yet constructed. I have attached the flow frequency and stream sanitation

Model used in the 2008 issuance. This also includes a map of the discharge point near Jordan Lake. Please provide any

TMDL information if relevant.

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 | jaime.bauer@deq.virginia.gov

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Rohoic Creek WWTP - VA0092274

TO: Jaime Bauer

FROM: Jennifer V. Palmore, P.G. *JVP*

DATE: November 20, 2007

COPIES: File

The Dinwiddie County Water Authority's Rohoic Creek Wastewater Treatment Plant proposes to discharge to Hatcher Run near Burgess, VA. The river mile for the discharge is 5AHRA008.36. Flow frequencies have been requested at this site for use in developing effluent limitations for the VPDES permit.

The USGS conducted several stream flow measurements on Hatcher Run at Route 613 near Reams, VA (#02046300) from 1981 to 1984. The measurements were correlated with the same day daily mean values from the USGS continuous record gauge on Stony Creek near Dinwiddie, VA (#02046000.) The measurements and daily mean values were plotted on a logarithmic graph and a best fit power trend line was plotted through the data points. The flow frequencies from the reference gage were plugged into the equation for the regression line to calculate the associated flow frequencies at the measurement site. Then drainage area proportion was used to determine the flow frequencies at the discharge point. The flow frequencies for the gauge, measurement site, and discharge point are presented below. The regression analysis is attached.

Stony Creek near Dinwiddie (#02046000)

Statistical period = 1946-2003

Drainage Area = 112 mi²

1Q30 = 0.12 cfs	High Flow 1Q10 = 14 cfs
1Q10 = 0.26 cfs	High Flow 7Q10 = 18cfs
7Q10 = 0.31 cfs	High Flow 30Q10 = 32 cfs
30Q10 = 0.77 cfs	HM = Undeterminable
30Q5 = 1.6 cfs	

Hatcher Run at Route 613 near Reams, VA (#02046300):

Drainage area = 35.7 mi²

1Q30 = 0.00 cfs	High Flow 1Q10 = 1.7 cfs
1Q10 = 0.01 cfs	High Flow 7Q10 = 2.3 cfs
7Q10 = 0.01 cfs	High Flow 30Q10 = 4.6 cfs
30Q10 = 0.05 cfs	HM = Undeterminable
30Q5 = 0.11 cfs	

Hatcher Run at discharge point:

Drainage Area = 25.04 mi²

1Q30 = 0.00 cfs (0.00 MGD)

1Q10 = 0.01 cfs (0.01 MGD)

7Q10 = 0.01 cfs (0.01 MGD)

30Q10 = 0.03 cfs (0.02 MGD)

30Q5 = 0.08 cfs (0.05 MGD)

High Flow 1Q10 = 1.2 cfs (0.75 MGD)

High Flow 7Q10 = 1.6 cfs (1.0 MGD)

High Flow 30Q10 = 3.2 cfs (2.1 MGD)

HM = Undeterminable

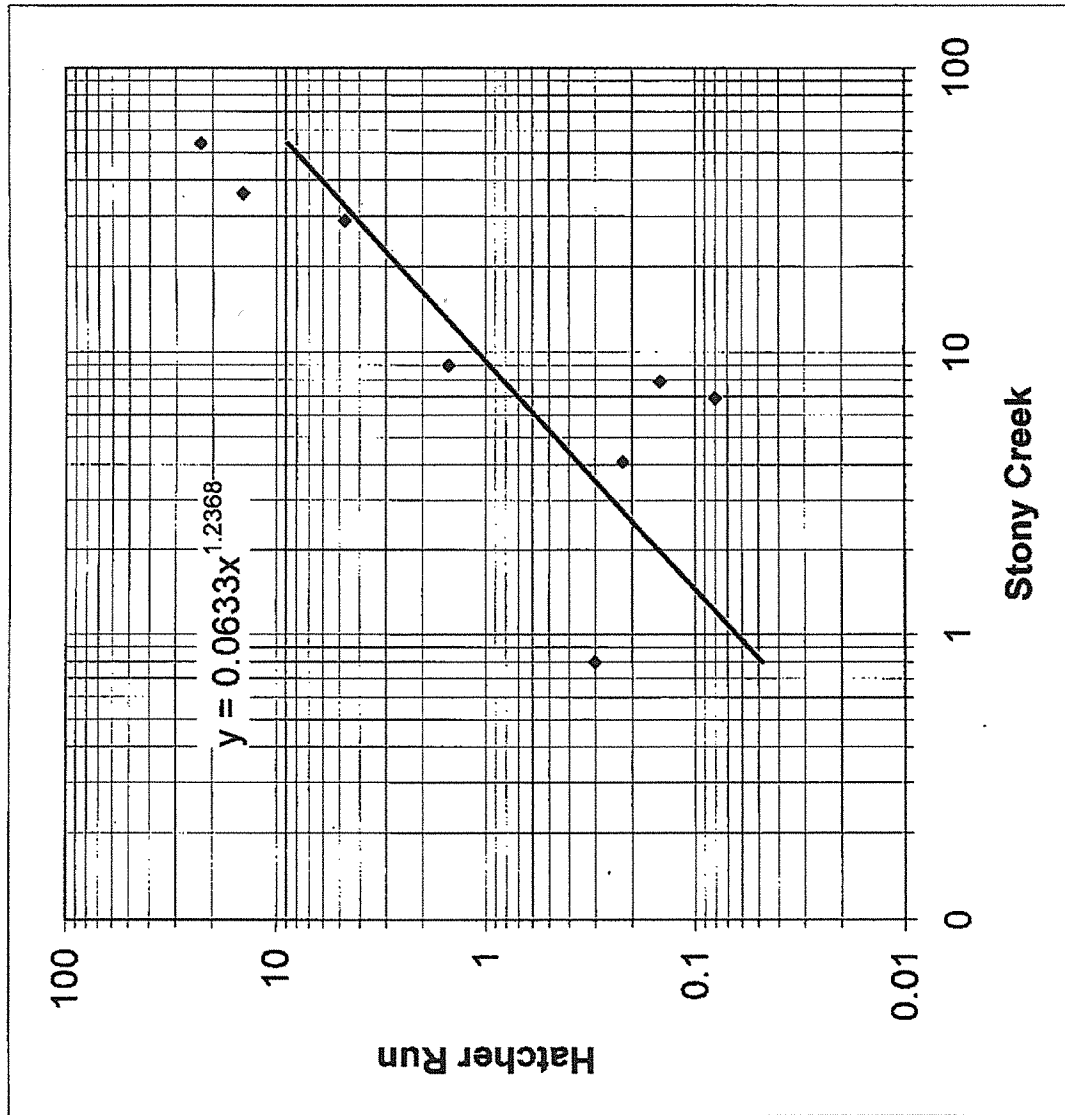
This analysis does not address any withdrawals, discharges, or springs influencing the flow of Hatcher Run between the discharge point and the measuring site. The high flow months are January through April.

During the 2006 305(b)/303(d) Water Quality Assessment, Hatcher Run was assessed as fully supporting of the Recreation and Wildlife Uses, not assessed of the Fish Consumption Use, and not supporting of the Aquatic Life Use due to widespread dissolved oxygen and pH violations within the upper Rowanty Creek watershed. The segment was considered Category 5C because the violations were believed to be caused by natural conditions.

A Natural Conditions Assessment was performed on the watershed in 2007. Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwater.

If you have any questions concerning this analysis, please let me know.

Hatcher Run at Route 613 near Reams, VA #02046300
vs Stony Creek near Dinwiddle, VA #02046000



Date
06/24/81
09/14/81
10/22/81
07/19/82
11/01/82
07/29/83
10/18/83
08/23/84

Flow Data (cfs)
Stony Creek
9.00
0.80
6.9
29
36
4.1
7.9
54
Hatcher Run
1.50
0.30
0.08
4.7
14.3
0.22
0.147
22.8

Flow Frequencies (cfs)

Stony Creek
0.12
0.26
0.31
0.77
1.6
14
18
32
--
112

Hatcher Run
0.00
0.01
0.01
0.05
0.11
1.7
2.3
4.6
--
35.7

Hatcher at Discharge
0.00
0.01
0.01
0.03
0.08
1.2
1.6
3.2
--
25.04

Regression Statistics
Multiple R
0.958167632
R Square
0.918085212
Adjusted R Square
0.904432747
Standard Error
2.629164144
Observations
8

ATTACHMENT 4

Permit Limitations Development

Hatchor Run has been re-classified as Class VII swamp waters, which are not easily modelable.

- ii North Fork Stewarts Creek from its confluence with Stewarts Creek upstream including all named and unnamed tributaries.
- ii Pauls Creek (Carroll County) from 10.9 miles above its confluence with Stewarts Creek upstream including all named and unnamed tributaries.
- i South Fork Stewarts Creek from its confluence with Stewarts Creek upstream including all named and unnamed tributaries.
- iii Stewarts Creek below Lambsburg in the vicinity of Route 696 (10.4 miles above its confluence with the Ararat River) to the confluence of the North and South Forks of Stewarts Creek.
- iii Sun Run from its confluence with the Ararat River upstream including all named and unnamed tributaries.
- iii Thompson Creek from its confluence with the Ararat River upstream including all named and unnamed tributaries.
- ii Turkey Creek from its confluence with Stewarts Creek upstream including all named and unnamed tributaries.
- ii Waterfall Branch from its confluence with Lovills Creek upstream including all named and unnamed tributaries.

9VAC25-260-470. Chowan and Dismal Swamp (Chowan River Subbasin).

SEC.	CLASS	SP. STDS.	SECTION DESCRIPTION
1	II	NEW-21	Blackwater River and its tidal tributaries from the Virginia-North Carolina state line to the end of tidal waters at approximately State Route 611 at river mile 20.90; Nottoway River and its tidal tributaries from the Virginia-North Carolina state line to the end of tidal waters at approximately Route 674.
2	VII	NEW-21	Blackwater River from the end of tidal waters to its headwaters and its free-flowing tributaries in Virginia, unless otherwise designated in this chapter.
2a	VII	PWS	Blackwater River and its tributaries from Norfolk's auxiliary raw water intake near Burdette, Virginia, to points 5 miles above the raw water intake, to include Corrowaugh Swamp to a point 5 miles above the raw water intake.
2b	III		Nottoway River from the end of tidal waters to its headwaters and its free-flowing tributaries in Virginia, unless otherwise designated in this chapter.
	VII		Swamp waters in Section 2b Assamoosick Swamp and its tributaries from river mile 2.50 to its headwaters. Black Branch Swamp from its confluence with the Nottoway River to its headwaters. Butterwood Creek from river mile 4.65 (near Route 622) upstream to river mile 14.59 (near Route 643). Cabin Point Swamp from its confluence with the Nottoway River to its headwaters.

			Cooks Branch from its confluence with Butterwood Creek to river mile 1.08
			Gosee Swamp and its tributaries from its confluence with the Nottoway River to river mile 6.88.
			Gravelly Run and its tributaries from its confluence with Rowanty Creek to river mile 8.56.
			Harris Swamp and its tributaries from its confluence with the Nottoway River to river mile 8.72.
			Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27 excluding Picture Branch.
			Hunting Quarter Swamp and its tributaries from its confluence with the Nottoway River to its headwaters.
			Moores and Jones Holes Swamp and tributaries from their confluence with the Nottoway River to its headwaters.
			Nebletts Mill Run and its tributaries from its confluence with the Nottoway River to its headwaters.
			Raccoon Creek and its tributaries from its confluence with the Nottoway River to its headwaters.
			Rowanty Creek and its tributaries from its confluence with the Nottoway River to Gravelly Run.
			Southwest Swamp and its tributaries from its confluence with Stony Creek to river mile 8.55.
			Three Creek and its tributaries from its confluence with the Nottoway River upstream to its headwaters Slagles Lake.
2c	III	PWS	Nottoway River and its tributaries from Norfolk's auxiliary raw water intake near Courtland, Virginia, to points 5 miles upstream unless otherwise designated in this chapter.
	VII		Swamp waters in Section 2c
			Assamoosick Swamp from its confluence with the Nottoway River to river mile 2.50.
2d			(Deleted)
2e	III	PWS	Nottoway River and its tributaries from the Georgia-Pacific and the Town of Jarratt's raw water intakes near Jarratt, Virginia, to points 5 miles above the intakes.
2f	III	PWS	Nottoway River and its tributaries from the Town of Blackstone's raw water intake to points 5 miles above the raw water intake.
2g	III	PWS	Lazaretto Creek and its tributaries from Crewe's raw water intake to points 5 miles upstream.
2h	III	PWS	Modest Creek and its tributaries from Victoria's raw water intake to their headwaters.
2i	III	PWS	Nottoway River and its tributaries from the Town of Victoria's raw water intake at the Falls (about 200 feet upstream from State Route 49) to points 5 miles upstream.

- (22) Roberts Creek from its confluence with the Pedlar River upstream to its first crossing with the National Forest boundary.
- (23) Shady Mountain Creek from its headwaters downstream to its confluence with the Pedlar River.
- (24) Cove Creek from its headwaters downstream to the National Forest boundary.
- (25) Little Cove Creek and its tributaries from the headwaters downstream to the National Forest boundary.
- (26) Rocky Branch from its headwaters downstream to its confluence with the North Fork of the Buffalo River.
- (27) North Fork of the Buffalo River from its confluence with Rocky Branch downstream to the National Forest Boundary.
- (28) The Hazel River in Rappahannock County from its headwaters to the first downstream crossing with the Shenandoah National Park boundary and all tributaries within this segment within the confines of Shenandoah National Park.
- (29) Little Stony Creek in Scott County from Bark Camp Lake dam to its confluence with Bakers Branch.
- (30) North River in Augusta County from the Staunton Reservoir dam to the first crossing with National Forest lands boundary (near Girl Scout Camp May Flather).

B. Any determinations concerning thermal discharge limitations made under § 316(a) of the Clean Water Act will be considered to be in compliance with the antidegradation policy.

9VAC25-260-40. Stream flow.

Man-made alterations in stream flow shall not contravene designated uses including protection of the propagation and growth of aquatic life.

9VAC25-260-50. Numerical criteria for dissolved oxygen, pH, and maximum temperature.***

CLASS	DESCRIPTION OF WATERS	DISSOLVED OXYGEN (mg/l)****		pH	Max. Temp. (°C)
		Min.	Daily Avg.		
I	Open Ocean	5.0	--	6.0-9.0	--
II	Estuarine Waters (Tidal Water-Coastal Zone to Fall Line)	4.0	5.0	6.0-9.0	--
III	Nontidal Waters (Coastal and Piedmont Zones)	4.0	5.0	6.0-9.0	32
IV	Mountainous Zones Waters	4.0	5.0	6.0-9.0	31
V	Stockable Trout Waters	5.0	6.0	6.0-9.0	21
VI	Natural Trout Waters	6.0	7.0	6.0-9.0	20
VII	Swamp Waters	*	*	3.7-8.0*	**

*This classification recognizes that the natural quality of these waters may fluctuate outside of the values for D.O. and pH set forth above as water quality criteria in Class I through VI waters. The natural quality of these waters is the water quality found or expected in the absence of human-induced pollution. Water quality standards will not be considered violated when conditions are determined by the board to be natural and not due to human-induced sources. The board may develop site specific criteria for Class VII waters that reflect the natural quality of the waterbody

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY

Water Division

4900 Cox Road P.O.Box 10009 Glen Allen, Virginia 23240

MEMORANDUM

Subject: Permit Limits for Waters not Easily Modelable

To: Larry G. Lawson

From: M. Dale Phillips *Dale*

Date: January 20, 1995

Copies: Fred Holt, Martin Ferguson, Jean Gregory

BACKGROUND:

The tidewater office has requested technical assistance relative to a particular class of dry ditch discharges and this memorandum is in response to that request. However, considering the number of questions that I have received from the regional offices over the past couple of years on similar subjects, I believe it would be worthwhile to review all the usual situations where permit limits (particularly for BOD) cannot be obtained by the application of our routine modeling procedures with the goal of consolidating and reaffirming existing guidance where appropriate and providing new guidance where needed.

SWAMPS:

The transport and fate processes that occur in swamps are not sufficiently known to allow routine theoretical models to be applied with any kind of confidence. As a result, the permit limits for discharges to swamps are established based on regulatory requirements and best engineering judgement.

Over 10 years ago the Board adopted a stream classification for swamp waters. However, no waterbody has been so classified to date. The result is that all of our swamps are classified as either class III or IV free flowing streams. The standards require the dissolved oxygen concentration (D.O.) to be maintained at an average of 5.0 mg/l with a minimum of 4.0 mg/l. However, the natural characteristics of a swamp result in D.O. concentrations that are essentially zero for a large part of the year. The standards that were legally adopted for them are inappropriate cannot be even approximately met. This causes a serious regulatory problem from a permitting standpoint because the regulations require that a permitted discharge must neither cause nor

contribute to a violation of the adopted standards regardless of whether they are correct or not. The problem with swamps arises mostly from these regulatory issues.

The existing guidance is adequate to meet the regulatory requirements because we have recommended effluent limitations that are sufficiently stringent to allow us to adequately defend our position that such permits will not contribute significantly to the low D.O. commonly found in swamps.

In my opinion, we could probably allow significantly more BOD to be discharged to swamps than we currently do if they were properly classified with an appropriate standard. From the standpoint of toxics we are probably right on target by not providing an allowance for mixing zones unless their actual extent is demonstrated by the discharger.

Existing guidance:

Effluents to a swamp or marsh require the following permit limits:

CBOD5 = 10 mg/l monthly average
TKN = 3 mg/l monthly average
D.O. = 3 mg/l minimum
Toxics = Effluent must meet standards*
Flow = not limited

* Mixing zones are not allowed unless the discharger provides actual data that demonstrates the size of the mixing zone and the dilution attained.

The above recommendations are based on:

BOD and TKN: The decay of these organic materials and the subsequent D.O. demand should not result in any significant contribution to the processes that cause low the D.O. normally found in these environments. This is primarily a regulatory issue.

Toxics and mixing zones: The waters involved have insignificant turbulence and flow for much of the time. Mixing is caused mainly by concentration gradients and will be very slow. This is engineering judgement based on the known physical properties of swamps and marshes.

I believe that this guidance is appropriate so long as these types of water bodies continue to be misclassified as free flowing streams. Once such waters are appropriately classified and standards are developed for them, it will be necessary to completely revise this guidance.

TIDAL MARSHES:

The processes occurring in water standing on a marsh at high tide are so complex that even large, field verified models cannot be successfully applied. As a result the permit limits for discharges to marshes are established based on regulatory requirements and best engineering judgement.

Tidal marshes, like swamps, receive a large load of organic material but unlike swamps they are tidal and normally do not have permanent

Palmore, Jennifer

From: Brockenbrough, Allan
Sent: Monday, February 04, 2008 1:31 PM
To: Palmore, Jennifer
Subject: RE: Rohoic Creek Model

You may want to model it as if the beaver pond didn't exist and see if you get something more stringent than 10-10-3. If so, go with what the model gives you. Otherwise, write it up as unmodelable and go with 10-10-3. I think the 10th percentile should be OK.

-----Original Message-----

From: Palmore, Jennifer
Sent: Monday, February 04, 2008 9:51 AM
To: Brockenbrough, Allan
Subject: Rohoic Creek Model

I think I might have to say this is unmodelable. I tried entering it with the Regional Model so I could get the coefficients, etc. and then tweak it as needed in Excel. When I enter the width of the beaver pool (30-40' depending on the location), the model predicts it should be a couple of inches deep, not 1.5' as we saw during our site visit (which was way below design flow of the plant). When I tried to change it, it kicked me out of the model b/c it defies Manning's. Between that and the ambient DO, maybe 10/10/3 limits are appropriate. But if you think the model is appropriate, I will keep working on it and just put it in Excel from the beginning. I just figured it would be easier to get the segmentation, slope calculations, etc first.

I attached the field data retrieval. I was thinking of using the 10th percentile DO (2.9 mg/L), but we also have data as low as 1.9 mg/L.

FYI – I told Jaime your recommendation was to do the metals limits so we do not repeat Dutoy. She is going to work on it. Ambient hardness is 19, so that doesn't look too good for them.

Jennifer V. Palmore, P.G.
Senior Environmental Engineer
Dept. of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
(804) 527-5058
(804) 527-5106 (fax)

2/7/2008

MEMORANDUM

DEPARTMENT OF ENVIRONMENTAL QUALITY
Piedmont Regional Office
4949-A Cox Road Glen Allen, Virginia 23060

SUBJECT: Flow Frequency Determination / 303(d) Status
Rohoic Creek WWTP – VA0092274

TO: Jaime Bauer

FROM: Jennifer V. Palmore, P.G. *JVP*

DATE: February 8, 2008

COPIES: File, Kelley Harris, Allan Brockenbrough, Curt Linderman, Mark Alling

The Dinwiddie County Water Authority's Rohoic Creek Wastewater Treatment Plant proposes to discharge 4.0 MGD to Hatcher Run near Burgess, VA. A stream sanitation analysis request was received on December 18, 2007.

Background

Hatcher Run is located within the Rowanty Creek watershed. The watershed has had historically low dissolved oxygen due to natural swampwater conditions. During the 2008 305(b)/303(d) assessment cycle, the PRO TMDL staff performed a Natural Conditions Assessment. Hatcher Run and its tributaries from its confluence with Rowanty Creek upstream to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwaters. The segment remains impaired of the dissolved oxygen and pH standard, but is classified as Category 4C until the Water Quality Standards can be revised to reclassify the stream as a Class VII. As there is currently no quantitative Water Quality Standard for dissolved oxygen in swamps, Allan Brockenbrough in OWPS suggested that an appropriate background minimum should be chosen and then the antidegradation guidance should be applied. I chose monitoring station 5AHRA010.94, which is an ambient station on Hatcher Run at the Route 631 bridge, approximately 2.6 miles upstream of the proposed discharge. The dissolved oxygen at this site varied between 1.90 mg/L and 13.60 mg/L. The 10th percentile dissolved oxygen value of 2.90 mg/L was chosen to represent a reasonable low-flow modeling condition. The antidegradation rule allowing no more than a 0.20 m/L drop below background was applied.

A discharge for the Picture Lake Campground sewage treatment plant is currently located on Picture Branch, which is a tributary of Hatcher Run. The discharge was originally modeled in 1977. Both Picture Branch and Hatcher Run were considered Tier 1 waters and antidegradation was not applied. In 1991, the stream was remodeled by D. X. Ren to also incorporate the Green Acre Mobile Home Park's discharge, which was located downstream of the Picture Lake Campground discharge; this discharge has subsequently been terminated. For this modeling effort, I remodeled Picture Branch with the Picture Lake Campground STP to determine the expected DO, TKN, and cBOD₅ concentrations that are entering Hatcher Run from Picture Branch. These concentrations were entered at the start of segment 3 for the current model.

The background flows for Hatcher Run were taken from my Flow Frequency Determination dated 11/20/2007. The background flows of Picture Branch were adjusted to 0.0218 MGD based on D.X. Ren's previous modeling effort. He commented that due to the Picture Lake dam, low flow releases may not equal the inflow to the lake so the 7Q10 flow from the 1977 modeling effort was carried over.

Modeling Effort

Kelley Harris and I performed a stream site inspection on January 28, 2008. The discharge will be located at the Route 1 bridge, directly downstream of the Jordan Lake dam. On the day of the visit there was visible flow over the dam. All of the streams are sandy bottomed and meandering increases downstream. Although the streams exhibit some swamp characteristics and are recommended to be Class VII swampwaters, the streams show a distinct channel.

A topographic map of the area is attached for reference. As the stream flows east from Route 1, it flows approximately 0.3 miles before it flows under I-85. In this first segment, the stream is straight and is backwatered by a low beaverdam which is located just downstream of I-85. At the widest point, the stream was approximately 30-40 feet wide during our visit. Water was flowing over the beaverdam, which is approximately 1.5 feet high. As the Regional Model 4.1 cannot model dams, the dam was ignored and I used the approximate stream channel characteristics that would exist if the dam did not exist, as recommended by Allan Brockenbrough.

The model ends at the extent of backwater of Steers Millpond, which is considered unmodelable using Regional Model 4.1. The model results show that at the millpond the dissolved oxygen has not yet recovered, however the cBOD₅ concentration is below the allowable concentration recommended for unmodelable waters in accordance with A.J. Anthony's Swamp Limits memorandum (1987). Although the guidance also recommends zero nitrogenous oxygen demand, the model indicates that a nBOD_u concentration of 0.16 mg/L exists at the model boundary. This exceeds the guidance recommendations; however the nBOD load is from the existing Picture Lake Campground STP, not from the proposed Rohoic Creek WWTP.

Recommendations

Based on the modeling, I recommend the following effluent limits for the Rohoic Creek WWTP permit:

Flow:	4.0 MGD
cBOD ₅ :	9 mg/L
TKN:	3.0 mg/L
DO:	5.0 mg/L minimum

The model documentation is attached. If you have any questions concerning this analysis, please do not hesitate to ask.

1/28/08

Stony Creek USGS sta 22 cfs

iso Hatchery: ~2 cfs

Hatchery at
Rt. 1

good flow over dam

~30' feet wide, ~2 ft

rectangular

0.25'/sec - 0.3'/sec

sandy, tannic, straight

Hatchery Run at Railroad Trestle

irregular channel

cloudy ~40' tannic

rectangular

Downstream of Railroad crossing

no defined channel - splits & merges

several splits in ~0.3 miles

tannic, sandy, marshy wetlands

visible flow - couple inches to 2 feet deep

depending on merge or not

100 yds DS of I-85

1.5' beaver dam upstream ~30' wide as at Rt. 1

downstream ~12' wide

channel
sand bars 1'/sec - up to 1' deep

1/28/2008

12:30 PM

I knocked but no one was home. I hope it is okay, but I am performing a stream inspection for a proposed sewage treatment plant discharge, which will be located upstream of your property at Route 1.

Picture Branch

5' - 0.5'/sec

Sorty tannic
rectangular

MODEL FILE AND STREAM INSPECTION REPORT FORM

Page 1

Discharge Name: Rohoic Creek WWTP

Location: Hatcher Run at Jordan Lake

Model File Path/Name: _____

Inspection Date: 01/28/08 Modeler: Jennifer Palmore

General Stream Information:

Stream Name: Hatcher Run

Basin: Chowan Section: 20 Class: VII Special Standards: none

Are the standards for this stream violated due to natural causes? (Y/N) _____

Is the stream correctly classified? (Y/N) _____

If "N", what is the correct classification? _____

Model Segmentation:

Number of segments to be modeled: 3

Flow Gauge / Flow Frequency Information (Attach Copy):

Gauge Used: Hatcher Run at Rt. 613

Drainage Area/Observed Flow At The Gauge: 35.7 sq. mi./mgd

Drainage Area/Observed Flow At The Start of The Model: 25.04 sq. mi./mgd

7Q10 of the Gauge: 0.0097 mgd

Flow Adjustment for Springs or Dischargers: _____ mgd

Background Water Quality:

Elevation at the Start of the model: 152 ft above mean sea level

Elevation at the End of the model: 131 ft above mean sea level

Critical Temperature: 23.2 °C (attach data and analysis)

Ambient Monitoring Gauge Used: SAHBAO 10.94

Additional Discharges Information:

Is there a discharger within 3 miles upstream of the proposed discharge? (Y/N) N

Does antidegradation apply to this analysis? (Y/N) Y If so, which segment(s)? _____

Is any segment on the current 303(d) list for D.O. violations? (Y/N) _____

Is any segment of the model within an approved D.O. TMDL segment? (Y/N) _____

Is any discharge to the model intermittent? (Y/N) _____

Any dams in stream section being modeled? (Y/N) _____

Notes/Sketch:

[Handwritten notes and sketch]

MODEL FILE AND STREAM INSPECTION REPORT FORM
Page 2

(Fill In This Page FOR EACH SEGMENT To Be Modeled)

Segment Number:		1
Reason for Defining Segment:	Discharge at Beginning of Segment	✓
	Physical Change at Beginning of Segment	
	Tributary at Beginning of Segment	
Length of Segment (mi.):		6.39
Drainage Area at Start of Segment (sq. mi.):		25.04
Drainage Area at End of Segment (sq. mi.):		25.27
Elevation at Start of Segment (ft.):		152
Elevation at End of Segment (ft.):		143
If Discharge or Tributary At Beginning of Segment, Complete the Following:		
Discharge/Tributary Name:		Roholic Creek WWTP
Discharge/Tributary Temperature (C): (If different from background ambient)		27
Critical Discharge/Tributary Flow (mgd): (Design/Permitted Flow or 7Q10 Condition) (use permitted or design flow for discharges, 7Q10 flow from flow frequency analysis for tributaries)		4.0
For Dischargers Only: (use permitted Concentrations)	CBOD₅ (mg/l):	
	TKN (mg/l):	
	D.O. (mg/l):	
General Type of Cross Section in Segment: (7Q10 Condition)		
Rectangular <input checked="" type="checkbox"/> Triangular <input type="checkbox"/> Deep Narrow U <input type="checkbox"/> Wide Shallow Arc <input type="checkbox"/> Irregular <input type="checkbox"/> No Defined Channel <input type="checkbox"/>		
General Channel Characteristics of Segment: (7Q10 Condition)		
Mostly Straight <input checked="" type="checkbox"/> Moderately Meandering <input type="checkbox"/> Severely Meandering <input type="checkbox"/> No Defined Channel <input type="checkbox"/>		
Does the stream have a pool and riffle character (Y/N)? (7Q10 Condition)		N
If "Y":	% of length that is pools _____	Average depth of pools (ft) _____
	% of length that is riffles _____	Average depth of riffles (ft) _____
Bottom:	Sand <input checked="" type="checkbox"/> Silt <input type="checkbox"/> Gravel <input type="checkbox"/> Small Rock <input type="checkbox"/> Large Rock <input type="checkbox"/> Boulders <input type="checkbox"/>	
Sludge Deposits:	None <input checked="" type="checkbox"/> Trace <input type="checkbox"/> Light <input type="checkbox"/> Heavy <input type="checkbox"/>	
Plants:	Rooted: None <input checked="" type="checkbox"/> Few <input type="checkbox"/> Light <input type="checkbox"/> Heavy <input type="checkbox"/> Algae: None <input checked="" type="checkbox"/> Film on Edges Only <input type="checkbox"/> Film on Entire Bottom <input type="checkbox"/>	
Projected 7Q10 Width of Segment (ft): (must be projected by modeler based on site visit)		35
Projected 7Q10 Depth of Segment (ft): (can be calculated by model based on width)		
Projected 7Q10 Velocity of Segment (ft): (can be calculated by model based on width)		
Does the water have an evident green color? (Y/N)		N

MODEL FILE AND STREAM INSPECTION REPORT FORM
Page 2

(Fill In This Page **FOR EACH SEGMENT** To Be Modeled)

Segment Number:		2
Reason for Defining Segment:	Discharge at Beginning of Segment	
	Physical Change at Beginning of Segment	✓
	Tributary at Beginning of Segment	!
Length of Segment (mi.):		0.66
Drainage Area at Start of Segment (sq. mi.):		25.27
Drainage Area at End of Segment (sq. mi.):		25.95
Elevation at Start of Segment (ft.):		143
Elevation at End of Segment (ft.):		138
If Discharge or Tributary At Beginning of Segment, Complete the Following:		
Discharge/Tributary Name:		
Discharge/Tributary Temperature (C): (If different from background ambient)		
Critical Discharge/Tributary Flow (mgd): (Design/Permitted Flow or 7Q10 Condition) (use permitted or design flow for discharges, 7Q10 flow from flow frequency analysis for tributaries)		
For Dischargers Only: (use permitted Concentrations)	CBOD₅ (mg/l):	
	TKN (mg/l):	
	D.O. (mg/l):	
General Type of Cross Section in Segment: (7Q10 Condition) Rectangular <input type="checkbox"/> Triangular <input type="checkbox"/> Deep Narrow U <input type="checkbox"/> Wide Shallow Arc <input type="checkbox"/> Irregular <input type="checkbox"/> No Defined Channel <input type="checkbox"/>		
General Channel Characteristics of Segment: (7Q10 Condition) Mostly Straight <input type="checkbox"/> Moderately Meandering <input type="checkbox"/> Severely Meandering <input type="checkbox"/> No Defined Channel <input type="checkbox"/>		
Does the stream have a pool and riffle character (Y/N)? (7Q10 Condition)		
If "Y":	% of length that is pools _____	Average depth of pools (ft) _____
	% of length that is riffles _____	Average depth of riffles (ft) _____
Bottom:	Sand <input type="checkbox"/> Silt <input type="checkbox"/> Gravel <input type="checkbox"/> Small Rock <input type="checkbox"/> Large Rock <input type="checkbox"/> Boulders <input type="checkbox"/>	
Sludge Deposits:	None <input type="checkbox"/> Trace <input type="checkbox"/> Light <input type="checkbox"/> Heavy <input type="checkbox"/>	
Plants:	Rooted:	None <input type="checkbox"/> Few <input type="checkbox"/> Light <input type="checkbox"/> Heavy <input type="checkbox"/>
	Algae:	None <input type="checkbox"/> Film on Edges Only <input type="checkbox"/> Film on Entire Bottom <input type="checkbox"/>
Projected 7Q10 Width of Segment (ft): (must be projected by modeler based on site visit)		
Projected 7Q10 Depth of Segment (ft): (can be calculated by model based on width)		
Projected 7Q10 Velocity of Segment (ft): (can be calculated by model based on width)		
Does the water have an evident green color? (Y/N)		

MODEL FILE AND STREAM INSPECTION REPORT FORM
Page 2

(Fill In This Page **FOR EACH SEGMENT** To Be Modeled)

Segment Number:		3
Reason for Defining Segment:	Discharge at Beginning of Segment	
	Physical Change at Beginning of Segment	
	Tributary at Beginning of Segment	✓
Length of Segment (mi.):		1.66
Drainage Area at Start of Segment (sq. mi.):		30.25
Drainage Area at End of Segment (sq. mi.):		31.21
Elevation at Start of Segment (ft.):		138
Elevation at End of Segment (ft.):		131
If Discharge or Tributary At Beginning of Segment, Complete the Following:		
Discharge/Tributary Name:		Picture Branch
Discharge/Tributary Temperature (C): (If different from background ambient)		
Critical Discharge/Tributary Flow (mgd): (Design/Permitted Flow or 7Q10 Condition) (use permitted or design flow for discharges, 7Q10 flow from flow frequency analysis for tributaries)		
For Dischargers Only: (use permitted Concentrations)	CBOD₅ (mg/l):	
	TKN (mg/l):	
	D.O. (mg/l):	
General Type of Cross Section in Segment: (7Q10 Condition) Rectangular ___ Triangular ___ Deep Narrow U ___ Wide Shallow Arc ___ Irregular ___ No Defined Channel ___		
General Channel Characteristics of Segment: (7Q10 Condition) Mostly Straight ___ Moderately Meandering ___ Severely Meandering ___ No Defined Channel ___		
Does the stream have a pool and riffle character (Y/N)? (7Q10 Condition)		
If "Y":	% of length that is pools _____	Average depth of pools (ft) _____
	% of length that is riffles _____	Average depth of riffles (ft) _____
Bottom:	Sand ___ Silt ___ Gravel ___ Small Rock ___ Large Rock ___ Boulders ___	
Sludge Deposits:	None ___ Trace ___ Light ___ Heavy ___	
Plants:	Rooted: None ___ Few ___ Light ___ Heavy ___	
	Algae: None ___ Film on Edges Only ___ Film on Entire Bottom ___	
Projected 7Q10 Width of Segment (ft): (must be projected by modeler based on site visit)		
Projected 7Q10 Depth of Segment (ft): (can be calculated by model based on width)		
Projected 7Q10 Velocity of Segment (ft): (can be calculated by model based on width)		
Does the water have an evident green color? (Y/N)		

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to HATCHER RUN.

File Information

File Name: C:\Documents and Settings\jvpalmore\My Documents\models\Reports\Roh
Date Modified: February 07, 2008

Water Quality Standards Information

Stream Name: HATCHER RUN
River Basin: Chowan River Basin
Section: 2b
Class: III - Nontidal Waters (Coastal and Piedmont)
Special Standards: None - recommended for Class VII

Background Flow Information

Gauge Used: Hatcher Run at Route 613 near Reams, VA #02046300
Gauge Drainage Area: 35.7 Sq.Mi.
Gauge 7Q10 Flow: 0.0097 MGD
Headwater Drainage Area: 25.04 Sq.Mi.
Headwater 7Q10 Flow: 6.803586E-03 MGD (Net; includes Withdrawals/Discharges)
Withdrawal/Discharges: 0 MGD
Incremental Flow in Segments: 2.717087E-04 MGD/Sq.Mi.

Background Water Quality

Background Temperature: 23.2 Degrees C - 90th %ile
Background cBOD5: 2 mg/l - default
Background TKN: 0.6 mg/l - mean
Background D.O.: 2.9 mg/l - 10th %ile

Model Segmentation

Number of Segments: 3
Model Start Elevation: 152 ft above MSL
Model End Elevation: 131 ft above MSL

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to HATCHER RUN.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	ROHOIC CREEK WWTP
VPDES Permit No.:	VA0092274

Discharger Flow Information

Flow:	4 MGD
cBOD5:	9 mg/l
TKN:	3 mg/l
D.O.:	5 mg/l
Temperature:	28 Degrees C

Geographic Information

Segment Length:	0.39 miles
Upstream Drainage Area:	25.04 Sq.Mi.
Downstream Drainage Area:	25.27 Sq.Mi.
Upstream Elevation:	152 Ft.
Downstream Elevation:	143 Ft.

Hydraulic Information

Segment Width:	12 Ft.
Segment Depth:	1 Ft.
Segment Velocity:	0.4 Ft./Sec.
Segment Flow:	4.007 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Mostly Straight
Pool and Riffle:	No
Bottom Type:	Sand
Sludge:	None
Plants:	None
Algae:	None

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to HATCHER RUN.

Segment Information for Segment 2

Definition Information

Segment Definition: A significant change occurs.

Geographic Information

Segment Length: 0.66 miles
Upstream Drainage Area: 25.27 Sq.Mi.
Downstream Drainage Area: 25.95 Sq.Mi.
Upstream Elevation: 143 Ft.
Downstream Elevation: 138 Ft.

Hydraulic Information

Segment Width: 12 Ft.
Segment Depth: 1 Ft.
Segment Velocity: 0.4 Ft./Sec.
Segment Flow: 4.007 MGD
Incremental Flow: 0 MGD (Applied at end of segment.)

Channel Information

Cross Section: Rectangular
Character: Moderately Meandering
Pool and Riffle: No
Bottom Type: Sand
Sludge: None
Plants: None
Algae: None

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to HATCHER RUN.

Segment Information for Segment 3

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	PICTURE BRANCH W/ PICTURE LAKE CAMPGROUND STP
VPDES Permit No.:	VA0070564

Discharger Flow Information

Flow:	0.0348 MGD
cBOD5:	5.47 mg/l
TKN:	7.8 mg/l
D.O.:	4.108 mg/l
Temperature:	28 Degrees C

Geographic Information

Segment Length:	1.95 miles
Upstream Drainage Area:	30.25 Sq.Mi.
Downstream Drainage Area:	31.21 Sq.Mi.
Upstream Elevation:	138 Ft.
Downstream Elevation:	131 Ft.

Hydraulic Information

Segment Width:	15 Ft.
Segment Depth:	1 Ft.
Segment Velocity:	0.3 Ft./Sec.
Segment Flow:	4.042 MGD
Incremental Flow:	0 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Irregular
Character:	Severely Meandering
Pool and Riffle:	No
Bottom Type:	Sand
Sludge:	None
Plants:	None
Algae:	None

modout

"Model Run For C:\Documents and Settings\jvpalmore\My Documents\models\Reports\RoHoic Creek WWTP\RoHoic Creek w Picture Branch as discharge.mod On 2/7/2008 1:07:45 PM"

"Model is for HATCHER RUN."
 "Model starts at the ROHOIC CREEK WWTP discharge."

"Background Data"
 "7Q10", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 .0068, 2, .6, 2.9, 23.2

"Discharge/Tributary Input Data for Segment 1"
 "Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 4, 9, 3, .5, 28

"Hydraulic Information for Segment 1"
 "Length", "width", "Depth", "velocity"
 "(mi)", "(ft)", "(ft)", "(ft/sec)"
 .39, 12, 1, .4

"Initial Mix Values for Segment 1"
 "Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 4.0068, 4.996, 22.47, 0, 7.913, 27.99185

"Rate Constants for Segment 1. - (All units Per Day)"
 "k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
 .9, 1.299, 13.846, 16.736, .15, .277, 0, 0

"Output for Segment 1"
 "Segment starts at ROHOIC CREEK WWTP"
 "Total", "Segm.", "DO", "CBOD", "nBOD"
 "Dist.", "Dist.", "(mg/l)", "(mg/l)", "(mg/l)"
 "(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"
 0, 0, 4.996, 22.47, 0
 .1, .1, 5.265, 22.028, 0
 .2, .2, 5.48, 21.595, 0
 .3, .3, 5.654, 21.171, 0
 .39, .39, 5.784, 20.796, 0

 "!!!THE WATER QUALITY STANDARD IS VIOLATED IN SEGMENT 1!!!"

"Discharge/Tributary Input Data for Segment 2"
 "Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 0, 0, 0, 0, 0

"Incremental Flow Input Data for Segment 2"
 "Flow", "CBOD5", "TKN", "DO", "Temp"
 "(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
 0, 2, .6, 7.123, 23.2

"Hydraulic Information for Segment 2"
 "Length", "width", "Depth", "velocity"
 "(mi)", "(ft)", "(ft)", "(ft/sec)"
 .66, 12, 1, .4

modout

"Initial Mix Values for Segment 2"
 "Flow" "DO" "CBOD" "nBOD" "DOSat" "Temp"
 "(mgd)" "(mg/l)" "(mg/l)" "(mg/l)" "(mg/l)" "deg C"
 4.0068, 5.784, 20.796, 0, 7.914, 27.99185

"Rate Constants for Segment 2. - (All units Per Day)"
 "k1" "k1@T" "k2" "k2@T" "kn" "kn@T" "BD" "BD@T"
 .9, 1.299, 4.545, 5.494, .15, .277, 0, 0

"Output for Segment 2"
 "Segment starts at "
 "Total" "Segm."
 "Dist." "Dist." "DO" "CBOD" "nBOD"
 "(mi)" "(mi)" "(mg/l)" "(mg/l)" "(mg/l)"
 .39, 0, 5.784, 20.796, 0
 .49, .1, 5.564, 20.387, 0
 .59, .2, 5.369, 19.986, 0
 .69, .3, 5.197, 19.593, 0
 .79, .4, 5.047, 19.208, 0
 .89, .5, 4.916, 18.831, 0
 .99, .6, 4.802, 18.461, 0
 1.05, .66, 4.742, 18.242, 0

 "!!!THE WATER QUALITY STANDARD IS VIOLATED IN SEGMENT 2!!!"

"Discharge/Tributary Input Data for Segment 3"
 "Flow" "CBOD5" "TKN" "DO" "Temp"
 "(mgd)" "(mg/l)" "(mg/l)" "(mg/l)" "deg C"
 .0348, 5.47, 7.8, 4.108, 28

"Incremental Flow Input Data for Segment 3"
 "Flow" "CBOD5" "TKN" "DO" "Temp"
 "(mgd)" "(mg/l)" "(mg/l)" "(mg/l)" "deg C"
 0, 2, .6, 7.125, 23.2

"Hydraulic Information for Segment 3"
 "Length" "width" "Depth" "velocity"
 "(mi)" "(ft)" "(ft)" "(ft/sec)"
 1.95, 15, 1, .3

"Initial Mix Values for Segment 3"
 "Flow" "DO" "CBOD" "nBOD" "DOSat" "Temp"
 "(mgd)" "(mg/l)" "(mg/l)" "(mg/l)" "(mg/l)" "deg C"
 4.0416, 4.737, 18.203, .179, 7.916, 27.99192

"Rate Constants for Segment 3. - (All units Per Day)"
 "k1" "k1@T" "k2" "k2@T" "kn" "kn@T" "BD" "BD@T"
 .7, 1.01, 2.154, 2.603, .15, .277, 0, 0

"Output for Segment 3"
 "Segment starts at PICTURE BRANCH W/ PICTURE LAKE CAMPGROUND STP"
 "Total" "Segm."
 "Dist." "Dist." "DO" "CBOD" "nBOD"
 "(mi)" "(mi)" "(mg/l)" "(mg/l)" "(mg/l)"
 1.05, 0, 4.737, 18.203, .179
 1.15, .1, 4.539, 17.832, .178
 1.25, .2, 4.359, 17.469, .177
 1.35, .3, 4.195, 17.113, .176
 1.45, .4, 4.047, 16.764, .175

				modout
1.55,	.5,	3.913,	16.422,	.174
1.65,	.6,	3.793,	16.087,	.173
1.75,	.7,	3.686,	15.759,	.172
1.85,	.8,	3.591,	15.438,	.171
1.95,	.9,	3.507,	15.123,	.17
2.05,	1,	3.434,	14.815,	.169
2.15,	1.1,	3.371,	14.513,	.168
2.25,	1.2,	3.317,	14.217,	.167
2.35,	1.3,	3.272,	13.927,	.166
2.45,	1.4,	3.235,	13.643,	.165
2.55,	1.5,	3.205,	13.365,	.164
2.65,	1.6,	3.182,	13.093,	.163
2.75,	1.7,	3.166,	12.826,	.162
2.85,	1.8,	3.156,	12.565,	.161
2.95,	1.9,	3.152,	12.309,	.16
3,	1.95,	3.152,	12.183,	.16

"*****"
 "!!!THE WATER QUALITY STANDARD IS VIOLATED IN SEGMENT 3!!!"
 "*****"

"END OF FILE"

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to PICTURE BRANCH.

Segment Information for Segment 1

Definition Information

Segment Definition:	A discharge enters.
Discharge Name:	PICTURE BRANCH CAMPGROUND STP
VPDES Permit No.:	

Discharger Flow Information

Flow:	0.013 MGD
cBOD5:	25 mg/l
TKN:	20 mg/l
D.O.:	6 mg/l
Temperature:	28 Degrees C

Geographic Information

Segment Length:	1.22 miles
Upstream Drainage Area:	3.71 Sq.Mi.
Downstream Drainage Area:	0 Sq.Mi.
Upstream Elevation:	157 Ft.
Downstream Elevation:	138 Ft.

Hydraulic Information

Segment Width:	3 Ft.
Segment Depth:	0.2 Ft.
Segment Velocity:	0.1 Ft./Sec.
Segment Flow:	0.035 MGD
Incremental Flow:	-0.001 MGD (Applied at end of segment.)

Channel Information

Cross Section:	Rectangular
Character:	Moderately Meandering
Pool and Riffle:	No
Bottom Type:	Sand
Sludge:	None
Plants:	None
Algae:	None

REGIONAL MODELING SYSTEM VERSION 4.0
Model Input File for the Discharge
to PICTURE BRANCH.

File Information

File Name: C:\Documents and Settings\jvpalmore\My Documents\models\Reports\Roh
Date Modified: February 06, 2008

Water Quality Standards Information

Stream Name: PICTURE BRANCH
River Basin: Chowan River Basin
Section: 2b
Class: III - Nontidal Waters (Coastal and Piedmont)
Special Standards: None

Background Flow Information

Gauge Used: Hatcher Run at Route 613 near Reams, VA #02046300
Gauge Drainage Area: 35.7 Sq.Mi.
Gauge 7Q10 Flow: 0.0097 MGD
Headwater Drainage Area: 3.71 Sq.Mi.
Headwater 7Q10 Flow: 0.022 MGD (Net; includes Withdrawals/Discharges) - from D.Y. Ren
Withdrawal/Discharges: 0.0208 MGD memo 3/26/91
Incremental Flow in Segments: 2.717087E-04 MGD/Sq.Mi. where 7Q10 =
0.0218 MGD

Background Water Quality

Background Temperature: 23.2 Degrees C - from SAHRO10.94
Background cBOD5: 2 mg/l
Background TKN: 0 mg/l > default
Background D.O.: 7.687885 mg/l

Model Segmentation

Number of Segments: 1
Model Start Elevation: 157 ft above MSL
Model End Elevation: 138 ft above MSL

modout
"Model Run For C:\Documents and Settings\jvpamore\My
Documents\models\Reports\Rohoic Creek WWTP\Picture Branch.mod On 2/6/2008 1:56:31
PM"

"Model is for PICTURE BRANCH."
"Model starts at the PICTURE BRANCH CAMPGROUND STP discharge."

"Background Data"
"7Q10", "CBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.022, 2, 0, 7.688, 23.2

"Discharge/Tributary Input Data for Segment 1"
"Flow", "CBOD5", "TKN", "DO", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.013, 25, 20, 6, 28

Current permit limits:
BODs = 30 mg/L
DOM = 6.0 mg/L

"Hydraulic Information for Segment 1"
"Length", "width", "Depth", "velocity"
"(mi)", "(ft)", "(ft)", "(ft/sec)"
1.22, 2.001, .2, .2

"Initial Mix Values for Segment 1"
"Flow", "DO", "CBOD", "nBOD", "DOSat", "Temp"
"(mgd)", "(mg/l)", "(mg/l)", "(mg/l)", "(mg/l)", "deg C"
.035, 7.061, 26.357, 27.341, 8.294, 24.98286

"Rate Constants for Segment 1. - (All units Per Day)"
"k1", "k1@T", "k2", "k2@T", "kn", "kn@T", "BD", "BD@T"
1.4, 1.76, 9.344, 10.516, .5, .734, 0, 0

"Output for Segment 1"
"Segment starts at PICTURE BRANCH CAMPGROUND STP"
"Total", "Segm.", "DO", "CBOD", "nBOD"
"Dist.", "Dist.", "(mg/l)", "(mg/l)", "(mg/l)"
"(mi)", "(mi)", "(mg/l)", "(mg/l)", "(mg/l)"
0, 0, 7.061, 26.357, 27.341
.1, .1, 5.703, 24.977, 26.735
.2, .2, 4.792, 23.669, 26.142
.3, .3, 4.201, 22.43, 25.562
.4, .4, 3.839, 21.256, 24.995
.5, .5, 3.639, 20.143, 24.441
.6, .6, 3.555, 19.088, 23.899
.7, .7, 3.551, 18.089, 23.369
.8, .8, 3.603, 17.142, 22.851
.9, .9, 3.693, 16.244, 22.344
1, 1, 3.808, 15.393, 21.849
1.1, 1.1, 3.939, 14.587, 21.365
1.2, 1.2, 4.079, 13.823, 20.891
1.22, 1.22, 4.108, 13.675, 20.798

"!!!THE WATER QUALITY STANDARD IS VIOLATED IN SEGMENT 1!!!"

"END OF FILE"

Segment ends at
Hatcher Run

2/20/2013 1:56:58 PM

Facility = Rohoic Creek WWTP

Chemical = TRC

Chronic averaging period = 4

WLAa = 0.019

WLAc = 0.011

Q.L. = 0.1

samples/mo. = 360

samples/wk. = 90

Summary of Statistics:

observations = 1

Expected Value = .2

Variance = .0144

C.V. = 0.6

97th percentile daily values = .486683

97th percentile 4 day average = .332758

97th percentile 30 day average = .241210

< Q.L. = 0

Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity

Maximum Daily Limit = 1.60883226245855E-02

Average Weekly limit = 7.43090172993183E-03

Average Monthly Limit = 7.00467354100591E-03

$\approx 0.0074 \text{ mg/L}$
 $\approx 0.007 \text{ mg/L}$

The data are:

0.2

ATTACHMENT 5

Storet Stream Data

Metals Specific Target Values for Water Quality Criteria Monitoring

		HARDNESS	25.00
ACUTE	COPPER ug/l	WQSACUTE	3.6
CHRONIC		WQSCHRONIC	2.7
<hr/>			
		HARDNESS	25.00
ACUTE	LEAD ug/l	WQSACUTE	20.36
CHRONIC		WQSCHRONIC	2.31
<hr/>			
		HARDNESS	25.00
ACUTE	ZINC ug/l	WQSACUTE	37.02
CHRONIC		WQSCHRONIC	37.02
<hr/>			
		HARDNESS	25.00
ACUTE	CADMIUM ug/l	WQSACUTE	0.82
CHRONIC		WQSCHRONIC	0.38
<hr/>			
		HARDNESS	25.00
ACUTE	CHROMIUM III ug/l	WQSACUTE	183.07
CHRONIC		WQSCHRONIC	23.81
<hr/>			
		HARDNESS	25.00
ACUTE	NICKEL ug/l	WQSACUTE	56.44
CHRONIC		WQSCHRONIC	6.27
<hr/>			
		HARDNESS	25.00
ACUTE	SIVER ug/l	WQSACUTE	0.32

VA0092274 - Rohoic Creek WWTP
STORET Data

Sta Id	Collection Date Time	Depth Desc	Depth	Container Id Desc	Comment	00900	
						HARDNESS, TOTAL (MG/L)	Com Code
5AHRA010.94	06/12/2001 13:30	S	0.3	R	NORMAL FLOW	11.5	
	08/13/2001 17:15	S	0.3	R	FLOW NORMAL	27.9	
	10/23/2001 16:00	S	0.3	R	LITTLE TO NO FLOW; EXTENSIVE LEAF COVER ON STREAM	15.1	
	12/05/2001 16:20	S	0.3	R	LOW FLOW	10.2	
	02/21/2002 15:00	S	0.3	R		19.1	
	04/02/2002 15:48	S	0.3	R	NORMAL FLOW	10.0	U
	06/20/2002 15:45	S	0.3	R	LOW FLOW	37.2	
	07/16/2002 11:30	S	0.3	R	NO FLOW, SAMPLE TAKEN FROM UPSTREAM POOL WHICH HAD NO OUTFLOW. HARRIS RUN, TODAY, WAS A SERIES OF UNCONNECTED POOLS.	45.5	
	09/19/2002 15:35	S	0.3	R	VERY LOW OR NO FLOW. COULD NOT SEE VISIBLE FLOW BUT COULD NOT DETERMINE IF WATER WAS POOLED.	24.5	
	11/25/2002 14:20	S	0.3	R	NORMAL FLOW	12.1	
	01/15/2003 14:15	S	0.3	R		10.7	
	03/20/2003 16:00	S	0.3	S1	ABOVE NORMAL FLOW. HYDROLAB #38552 - DO IN BUCKET = 9.27. WINKLER DO WAS LAB TITRATED.	16.6	
	05/14/2003 15:00	S	0.3	R	NORMAL FLOW	20.7	
	01/18/2007 12:10	S	0.3	R		10.0	U
	03/21/2007 11:15	S	0.3	R	NORMAL FLOW	10.0	
	05/30/2007 11:05	S	0.3	R	NORMAL FLOW	23.0	
Mean						19.0	

VA0092274 - Rohoic Creek WWTP
STORET Data

Station ID	Collection Date Time	Depth Desc	Depth	Temp Celcius	Field Ph	Do Probe
5AHRA010.94	7/13/1994	S	.30	23.24	6.64	2.15
5AHRA010.94	10/11/1994	S	.30	12.46	6.27	3.08
5AHRA010.94	6/12/2001	S	.30	22.97	6.22	5.87
5AHRA010.94	8/13/2001	S	.30	25.63	5.92	5.49
5AHRA010.94	10/23/2001	S	.30	13.84	5.75	1.90
5AHRA010.94	12/5/2001	S	.30	8.12		5.71
5AHRA010.94	2/21/2002	S	.30	11.39	6.73	9.58
5AHRA010.94	4/2/2002	S	.30	15.89	6.55	10.35
5AHRA010.94	6/20/2002	S	.30	21.71	6.86	2.41
5AHRA010.94	7/16/2002	S	.30	22.21	6.55	2.48
5AHRA010.94	9/19/2002	S	.30	19.42	6.46	3.09
5AHRA010.94	11/25/2002	S	.30	7.35	5.61	10.03
5AHRA010.94	1/15/2003	S	.30	2.52	6.38	12.59
5AHRA010.94	3/20/2003	S	.30	9.71	5.47	9.23
5AHRA010.94	3/20/2003	S	.00			
5AHRA010.94	5/14/2003	S	.30	18.39	6.10	6.35
5AHRA010.94	1/23/2006	S	.30	6.05	6.29	10.63
5AHRA010.94	2/14/2006	S	.30	4.06	6.06	11.31
5AHRA010.94	3/22/2006	S	.30	6.50	6.50	9.70
5AHRA010.94	4/24/2006	S	.30	18.40	6.40	7.30
5AHRA010.94	5/23/2006	S	.30	17.30	6.60	6.90
5AHRA010.94	6/29/2006	S	.30	24.90	6.50	5.40
5AHRA010.94	7/18/2006	S	.30	26.20	6.60	4.20
5AHRA010.94	8/21/2006	S	.30	23.20	6.90	2.90
5AHRA010.94	1/16/2007	S	.30	13.10	7.50	7.60
5AHRA010.94	1/18/2007	S	.30	3.40	6.20	11.70
5AHRA010.94	1/26/2007	S	.30	.80	6.90	13.60
5AHRA010.94	2/12/2007	S	.30	1.50	5.90	13.60
5AHRA010.94	3/6/2007	S	.30	6.40	6.70	11.00
5AHRA010.94	3/21/2007	S	.30	10.70	6.90	9.70
5AHRA010.94	4/2/2007	S	.30	17.50	6.10	7.60
5AHRA010.94	5/15/2007	S	.30	18.00	6.90	7.20
5AHRA010.94	5/30/2007	S	.30	22.00	6.90	5.60
5AHRA010.94	6/26/2007	S	.30	22.40	6.80	3.80
5AHRA010.94	7/24/2007	S	.30	20.00	6.80	
5AHRA010.94	7/25/2007	S	.30	20.30	6.80	
5AHRA010.94	8/7/2007	S	.30	25.90	7.00	4.20
5AHRA010.94	9/17/2007	S	.30	16.00	7.20	4.20
5AHRA010.94	9/19/2007	S	.30	16.30	6.80	4.60
5AHRA010.94	10/2/2007	S	.30	15.50	7.10	3.80
5AHRA010.94	11/26/2007	S	.30	8.20	6.90	6.90
5AHRA010.94	11/28/2007	S	.30	7.90	7.30	7.90
5AHRA010.94	12/19/2007	S	.30	2.80	8.00	
5AHRA010.94	1/10/2008	S	.30	8.70	5.20	9.50
90th percentile				23.2	7.1	
10th percentile				3.5	5.9	2.9

ATTACHMENT 6

Whole Effluent Toxicity Analysis

Wyatt, Frederick (DEQ)

From: DeBiasi, Deborah (DEQ)
Sent: Wednesday, February 20, 2013 11:56 AM
To: Wyatt, Frederick (DEQ)
Subject: RE: Voice Message from Wyatt, Frederick (DEQ) (6764810)
Attachments: oledata.mso; RE: VA0092274 WET Boilerplate confirmation

Ok, here is the guidance/training blurb:

If you were to put this into WETLIM10, there would be "0" flow for the receiving stream, since it is a swamp, so the WLAa and WLAc are the acute and chronic criteria (see below). Jaime accidentally put the chronic endpoint as 68%, but it should be an NOEC of 69% for chronic, and the NOAEC test for acutes. Have them do 10 sets of tests, then if the statistical evaluation shows no reasonable potential, then they can go to annual frequency. The language she has is mostly good to use.

Let me know if you have any other questions.

Lakes, Marshes and Swamps

WLA's are set to instream criteria since mixing assumptions not applicable:

$WLAa = 0.3 TUa$ $WLAa,c = 0.3 \times ACR = 3.0 TUc$
 $WLAc = 1.0 TUc$

Acute endpoint is NOAEC = 100%

Chronic endpoint is NOEC $\geq 69\%$ $TUc \leq 1.44$

Session 9

26

Deborah L. DeBiasi, Virginia DEQ
Office of Water Permit and Compliance Assistance Programs
Email: Deborah.DeBiasi@deq.virginia.gov
PH: 804-698-4028

From: Wyatt, Frederick (DEQ)
Sent: Wednesday, February 20, 2013 11:07 AM
To: DeBiasi, Deborah (DEQ)
Subject: Voice Message from Wyatt, Frederick (DEQ) (6764810)

Wyatt, Frederick (DEQ)

From: Bauer, Jaime (DEQ)
Sent: Tuesday, December 18, 2012 12:37 PM
To: DeBiasi, Deborah (DEQ)
Subject: RE: VA0092274 WET Boilerplate confirmation
Attachments: 2008 Fact Sheet w Attachments.pdf

Thanks, Deborah. The 12 quarters of testing (3 years) came from an email from you 3/5/2008 when I originally issued the permit. If this has changed to just 10 quarters of testing I am fine with making that change. Just let me know. I have attached the FS that shows the correspondence from you page 59-62. (unfortunately because of the new laptops I can't just extract the WET section of the FS.

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 | jaime.bauer@deq.virginia.gov

From: DeBiasi, Deborah (DEQ)
Sent: Tuesday, December 18, 2012 12:23 PM
To: Bauer, Jaime (DEQ)
Subject: RE: VA0092274 WET Boilerplate confirmation

Hey, Jaime –

You need to add “statistically”

e. The test data will be evaluated statistically ~~by~~ for reasonable potential at the conclusion of the test period.

While I don't object to asking for 12 quarters of testing, guidance has been to ask for 10 sets of tests so that you don't have to use the default values when evaluating the data.

I've attached a sample DMR to show how the NOAEC test results would be entered (as percent, not TUa).

As a note, WET tests are usually too large to submit with E-DMR, so you should note that they need to be mailed to the regional office, or emailed to you or your compliance auditor, however you do things there.

Deborah L. DeBiasi, Virginia DEQ
Office of Water Permit and Compliance Assistance Programs
Email: Deborah.DeBiasi@deq.virginia.gov
PH: 804-698-4028

From: Bauer, Jaime (DEQ)
Sent: Tuesday, December 18, 2012 12:12 PM
To: DeBiasi, Deborah (DEQ)
Subject: VA0092274 WET Boilerplate confirmation

Hi, Deborah,

I am working on the reissuance for a proposed 4.0 MGD plant in Dinwiddie (Rohoic Creek WWTP, VA0092274). Below is the WET language that we used in the 2008 permit. In addition to a WET Special Condition section of the permit, we also required the WET data to be reported in terms of NOEC and NOAEC on the DMR. Could you please confirm if the

language below is still appropriate and/or if DMR data should be reported in units of TUa/TUc? Attached is the WETLIM spreadsheet for this reissuance. Please let me know if you have any questions.

Thanks!
Jaime

1. Biological Monitoring

- a. In accordance with the schedule in Part 1.D.2. below and commencing within six months of the issuance of the CTO, the permittee shall conduct quarterly acute and chronic toxicity tests for a period of three years or until expiration of this permit, whichever occurs first, using 24-hour flow-proportioned composite samples of final effluent from outfall 001. The acute multi-dilution NOAEC tests shall be:

48-hour static tests using *Ceriodaphnia dubia*
48-hour static tests using *Pimephales promelas*

- b. These acute tests shall be performed with a minimum of 5 dilutions, derived geometrically with a minimum of 4 replicates, with 5 organisms in each, for calculation of a valid NOAEC (No Observed Adverse Effect Concentration). The NOAEC, as determined by hypothesis testing, shall be reported on the DMR. The LC₅₀ should also be determined and noted on the submitted report. Tests in which control survival is less than 90% are not acceptable.

The chronic tests to use are:

Chronic 3-Brood Static Renewal Survival and Reproduction Test using *Ceriodaphnia dubia*
Chronic 7-Day Static Renewal Survival and Growth Test using *Pimephales promelas*

- c. These chronic tests shall be conducted in such a manner and at sufficient dilutions (minimum of five dilutions, derived geometrically) to determine the "No Observed Effect Concentration" (NOEC) for survival and reproduction or growth. Results which cannot be quantified (i.e., a "less than" NOEC value) are not acceptable, and a retest will have to be performed within the compliance period. Express the test NOEC as TU_c (Chronic Toxic Units), by dividing 100/NOEC for reporting. Report the LC₅₀ at 48 hours and the IC₂₅ with the NOECs in the test report.

The permittee may provide additional samples to address data variability during the period of initial data generation. These data shall be reported and may be included in the evaluation of effluent toxicity. Test procedures and reporting shall be in accordance with the WET testing methods cited in 40 CFR 136.3.

- d. The test dilutions should be able to determine compliance with the following endpoints:
- (1) Acute (NOAEC) = 100%
 - (2) Chronic (NOEC) ≥ 68% equivalent to a TU_c ≤ 1.44.
- e. The test data will be evaluated by for reasonable potential at the conclusion of the test period. The data may be evaluated sooner if requested by the permittee, or if toxicity has been noted. Should evaluation of the data indicate that a limit is needed a WET limit and compliance schedule will be required and the toxicity tests of 1.a., b., and c. above may be discontinued.
- f. The permit may be modified or revoked and reissued to include pollutant specific limits in lieu of a WET limit should it be demonstrated that toxicity is due to specific parameters. The pollutant specific limits must control the toxicity of the effluent.
- g. If after evaluating the data, it is determined that no limit is needed, the permittee shall continue acute and chronic toxicity testing (both species) of the outfall annually, as on the reporting schedule in Part 1.D.2.

2. Reporting Schedule:

The permittee shall report the results of the WET test on the DMR and submit 2 copies of the toxicity tests reports specified in this Toxics Management Program in accordance with the following schedule:

- a. Submit WET test results on the DMR quarterly beginning within 6 months of commencing discharge and continuing for at least 12 quarters (3 years) or until expiration of this permit, whichever occurs first.
- b. Submit WET test results on the DMR annually until expiration of this permit after 12 quarters of monitoring if no limit is needed in accordance with Part I.D.1.g, above.

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |
jaime.bauer@deq.virginia.gov

Wyatt, Frederick (DEQ)

From: DeBiasi, Deborah (DEQ)
Sent: Tuesday, December 18, 2012 12:55 PM
To: Bauer, Jaime (DEQ)
Subject: RE: VA0092274 WET Boilerplate confirmation

I just missed commenting on the test frequency and inserting “statistically”. More data is always better, but 10 sets is routinely what we ask for – as long we have at least 10 sets of data, the default CV and maybe the ACR will be data specific.

Deborah L. DeBiasi, Virginia DEQ
Office of Water Permit and Compliance Assistance Programs
Email: Deborah.DeBiasi@deq.virginia.gov
PH: 804-698-4028

From: Bauer, Jaime (DEQ)
Sent: Tuesday, December 18, 2012 12:37 PM
To: DeBiasi, Deborah (DEQ)
Subject: RE: VA0092274 WET Boilerplate confirmation

Thanks, Deborah. The 12 quarters of testing (3 years) came from an email from you 3/5/2008 when I originally issued the permit. If this has changed to just 10 quarters of testing I am fine with making that change. Just let me know. I have attached the FS that shows the correspondence from you page 59-62. (unfortunately because of the new laptops I can't just extract the WET section of the FS.

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |
jaime.bauer@deq.virginia.gov

From: DeBiasi, Deborah (DEQ)
Sent: Tuesday, December 18, 2012 12:23 PM
To: Bauer, Jaime (DEQ)
Subject: RE: VA0092274 WET Boilerplate confirmation

Hey, Jaime –

You need to add “statistically”

e. The test data will be evaluated statistically by-for reasonable potential at the conclusion of the test period.

While I don't object to asking for 12 quarters of testing, guidance has been to ask for 10 sets of tests so that you don't have to use the default values when evaluating the data.

I've attached a sample DMR to show how the NOAEC test results would be entered (as percent, not TUa).

As a note, WET tests are usually too large to submit with E-DMR, so you should note that they need to be mailed to the regional office, or emailed to you or your compliance auditor, however you do things there.

Deborah L. DeBiasi, Virginia DEQ
Office of Water Permit and Compliance Assistance Programs

ATTACHMENT 7
303 (d) Fact Sheets
TMDL

Wyatt, Frederick (DEQ)

From: Bauer, Jaime (DEQ)
Sent: Thursday, February 07, 2013 1:37 PM
To: Wyatt, Frederick (DEQ)
Subject: FW: VA0092274 Flow Freq Request

Fred,

Thanks for speaking with me today regarding the bacterial TMDL for Hatcher Run and the Rohoic Creek WWTP. Please see the 2 most recent emails below from our planning staff and myself confirming that there is no TMDL for the segment of Hatcher Run to which the plant discharges. We can discuss more in depth during tomorrow's conference call if necessary.

Jaime

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 | jaime.bauer@deq.virginia.gov

From: Palmore, Jennifer (DEQ)
Sent: Thursday, February 07, 2013 1:17 PM
To: Bauer, Jaime (DEQ)
Subject: RE: VA0092274 Flow Freq Request

The discharge wasn't included. It is located *downstream* of the study area, which did not include all of Hatcher Run. Page 1-2 of the report has a map that shows the watershed study areas.

Hope that answers their question.

Thanks!

Jennifer

From: Bauer, Jaime (DEQ)
Sent: Thursday, February 07, 2013 1:00 PM
To: Palmore, Jennifer (DEQ)
Subject: FW: VA0092274 Flow Freq Request

Jennifer,

The Rohoic Creek WWTP is one of the permits we sent down to SWRO for workshare. Their staff looked up Hatcher Run and believes that there is a bacterial TMDL for the receiving water. The info you provided me in November did not indicate such. Can you confirm this?

I just looked up Hatcher Run on the TMDL portion of the DEQ website and found this report:
<http://www.deq.virginia.gov/Portals/0/DEQ/Water/TMDL/apptmdls/chowanrvr/neblettshatcher.pdf>

Maybe this is what they are talking about...

If you need any additional information, please let me know.

2010 Fact Sheets for 303(d) Waters

RIVER BASIN:	Chowan River and Dismal Swamp Basins	HYDROLOGIC UNIT:	03010201
STREAM NAME:	Nottoway River and Tributaries		
TMDL ID:	K19R-04-HG	2010 IMPAIRED AREA ID:	VAP-K19R-04
ASSESSMENT CATEGORY:	5A	TMDL DUE DATE:	2020
IMPAIRED SIZE:	123.47 - Miles	Watershed:	VAP-K19R
INITIAL LISTING:	2008		
UPSTREAM LIMIT:	Route 619 near Purdy		
DOWNSTREAM LIMIT:	Virginia-North Carolina state line		

The Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributaries Assamoosick Swamp, Three Creek up to I-95, Rowanty Creek and tributaries, Hatcher Run to I-85, and Arthur Swamp to I-85.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Not Supporting

IMPAIRMENT: Mercury

During the 2008 cycle, the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp, was considered impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury. Three Creek up to I-95, Rowanty Creek and its tributaries, Hatcher Run up to I-85, and Arthur Swamp up to I-85 were added to the advisory during the 2010 cycle. No more than two meals/mouth of largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species are recommended.

The advisory was based on fish tissue exceedances of TSVs and TVs at several DEQ fish tissue monitoring stations.

IMPAIRMENT SOURCE: Unknown

The source of the mercury is considered unknown, however atmospheric deposition is suspected.

RECOMMENDATION: Problem Characterization

2010 Fact Sheets for 303(d) Waters

RIVER BASIN:	Chowan River and Dismal Swamp Basins	HYDROLOGIC UNIT:	03010201
STREAM NAME:	Rowanty Creek and tributaries; Gosee Swamp and tributaries		
TMDL ID:	K23R-01-DO	2010 IMPAIRED AREA ID:	VAP-K23R-01/VA
ASSESSMENT CATEGORY:	4C	TMDL DUE DATE:	2010
IMPAIRED SIZE:	319.81 - Miles	Watershed:	VAP-K23R
INITIAL LISTING:	1998		
UPSTREAM LIMIT:	Headwaters		
DOWNSTREAM LIMIT:	Nottoway River		

The entire Rowanty Creek and Gosee Swamp watersheds.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting

IMPAIRMENT: Dissolved Oxygen

The entire Rowanty Creek watershed has previously been assessed as not supporting of the Aquatic Life use support goal based on DO exceedances at 5AHRA010.94, 5AROW013.14, and 5AROW002.41 and DO exceedances in 1994 at 5APCT001.23, 5AGRV006.00, 5AGRV004.35, 5AHRA010.94, 5AHRA003.42, 5AHRA002.92, 5AATH003.28, 5ALCC000.54, 5AROW008.64, and 5AROW004.72.

During the 2006 cycle, the lower portion of the Rowanty Creek watershed below Gravelly Run was reclassified as Class VII swampwaters. That segment was now in conformance with the DO standards and was delisted. However, the upper Class III portion still had DO exceedances at 5AATH003.28 and 5AHRA010.94 and remained impaired.

During the 2008 cycle, additional monitoring was conducted in the watershed as part of a Natural Conditions Assessment. Gravelly Run and its tributaries from its mouth upstream to river mile 8.56 and Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwater.

The majority of segments remain impaired of the dissolved oxygen standard, but will be classified as Category 4C until the swampwater DO standard can be developed. Picture Branch is a Class III waters, but was delisted because station 5APCT001.23 has an acceptable DO exceedance rate.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a DO exceedance rate of 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2008 cycle, Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 were reclassified as Class VII swampwater. The segment remained impaired for dissolved oxygen until the Class VII DO criteria can be developed. The segment was shortened to match the Class VII designation.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a pH 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2010 cycle, Hatcher Run and its tributaries from its confluence with Rowanty Creek to rivermile 19.27 (excluding Picture Branch), Rowanty Creek and its tributaries from its confluence with the Nottoway River to Gravelly Run, and Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 were all classified as Class VII swampwaters. The segment will remain Category 4C for dissolved oxygen.

IMPAIRMENT SOURCE: Natural Conditions

2012 Fact Sheets for 303(d) Waters

RIVER BASIN: Chowan River and Dismal Swamp Basins **HYDROLOGIC UNIT:** 03010201

STREAM NAME: Nottoway River and Tributaries

TMDL ID: K19R-04-HG **2012 IMPAIRED AREA ID:** VAP-K19R-04

ASSESSMENT CATEGORY: 5A **TMDL DUE DATE:** 2020

IMPAIRED SIZE: 123.47 - Miles **Watershed:** VAP-K19R

INITIAL LISTING: 2008

UPSTREAM LIMIT: Route 619 near Purdy

DOWNSTREAM LIMIT: Virginia-North Carolina state line

The Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributaries Assamoosick Swamp, Three Creek up to I-95, Rowanty Creek and tributaries, Hatcher Run to I-85, and Arthur Swamp to I-85.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Fish Consumption Use - Not Supporting

IMPAIRMENT: Mercury

During the 2008 cycle, the Nottoway River from the confluence with the Blackwater River at the Virginia-North Carolina state line upstream to State Route 619 near Purdy, including its tributary Assamoosick Swamp, was considered impaired of the Fish Consumption Use due to a VDH fish consumption advisory for mercury. Three Creek up to I-95, Rowanty Creek and its tributaries, Hatcher Run up to I-85, and Arthur Swamp up to I-85 were added to the advisory during the 2010 cycle. No more than two meals/month of largemouth bass, smallmouth bass, bowfin, redhorse sucker species, longnose gar, channel catfish, chain pickerel, or sunfish species are recommended.

The advisory was based on fish tissue exceedances of TSVs and TVs at several DEQ fish tissue monitoring stations, including 5ANTW091.70, 5ANTW075.48, 5ANTW077.95, 5ANTW045.45, 5AASM013.36, 5AROW002.41, 5AATH006.56, and 5AHRA004.16.

IMPAIRMENT SOURCE: Unknown, Atmospheric Deposition

The source of the mercury is considered unknown, however atmospheric deposition is suspected.

RECOMMENDATION: Problem Characterization

2012 Fact Sheets for 303(d) Waters

RIVER BASIN:	Chowan River and Dismal Swamp Basins	HYDROLOGIC UNIT:	03010201
STREAM NAME:	Rowanty Creek and tributaries; Gosee Swamp and tributaries		
TMDL ID:	K23R-01-DO	2012 IMPAIRED AREA ID:	VAP-K23R-01/VA
ASSESSMENT CATEGORY:	4C	TMDL DUE DATE:	2010
IMPAIRED SIZE:	319.73 - Miles	Watershed:	VAP-K23R
INITIAL LISTING:	1998		
UPSTREAM LIMIT:	Headwaters		
DOWNSTREAM LIMIT:	Nottoway River		

The entire Rowanty Creek and Gosee Swamp watersheds.

CLEAN WATER ACT GOAL AND USE SUPPORT:

Aquatic Life Use - Not Supporting

IMPAIRMENT: Dissolved Oxygen

The entire Rowanty Creek watershed has previously been assessed as not supporting of the Aquatic Life use support goal based on DO exceedances at 5AHRA010.94, 5AROW013.14, and 5AROW002.41 and DO exceedances in 1994 at 5APCT001.23, 5AGRV006.00, 5AGRV004.35, 5AHRA010.94, 5AHRA003.42, 5AHRA002.92, 5AATH003.28, 5ALCC000.54, 5AROW008.64, and 5AROW004.72.

During the 2006 cycle, the lower portion of the Rowanty Creek watershed below Gravelly Run was reclassified as Class VII swampwaters. That segment was now in conformance with the DO standards and was delisted. However, the upper Class III portion still had DO exceedances at 5AATH003.28 and 5AHRA010.94 and remained impaired.

During the 2008 cycle, additional monitoring was conducted in the watershed as part of a Natural Conditions Assessment. Gravelly Run and its tributaries from its mouth upstream to river mile 8.56 and Hatcher Run and its tributaries from its confluence with Rowanty Creek to river mile 19.27, excluding Picture Branch, were recommended for reclassification as Class VII swampwater. Picture Branch was delisted because station 5APCT001.23 has an acceptable DO exceedance rate.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a DO exceedance rate of 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2008 cycle, Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 were reclassified as Class VII swampwater. The segment remained impaired for dissolved oxygen until the Class VII DO criteria can be developed. The segment was shortened to match the Class VII designation.

The Gosee Swamp watershed was assessed as not supporting of the Aquatic Life use because of a pH 2/2 at 5AGSE001.35 during the 1998 cycle.

During the 2010 cycle, Hatcher Run and its tributaries from its confluence with Rowanty Creek to rivermile 19.27 (excluding Picture Branch), Rowanty Creek and its tributaries from its confluence with the Nottoway River to Gravelly Run, and Gosee Swamp and its tributaries from its confluence with the Nottoway River to rivermile 6.88 were all classified as Class VII swampwaters. The segment will remain Category 4C for dissolved oxygen.

IMPAIRMENT SOURCE: Natural Conditions

The DO exceedances in this segment are attributed to natural conditions.

ATTACHMENT 8
T & E Species

VaFWIS Initial Project Assessment Report[Help](#)

Compiled on 1/28/2013, 11:02:15 AM

Known or likely to occur within a **2 mile radius around**
point 37,09,12.0 77,31,01.0
in 053 Dinwiddie County, VA

[View Map of
Site Location](#)

388 Known or Likely Species ordered by Status Concern for Conservation
 (displaying first 20) (19 species with Status* or Tier I** or Tier II**)

<u>BOVA Code</u>	<u>Status*</u>	<u>Tier**</u>	<u>Common Name</u>	<u>Scientific Name</u>	<u>Confirmed</u>	<u>Database(s)</u>
010214	FESE	I	<u>Logperch, Roanoke</u>	Percina rex		BOVA,Habitat
040228	FESE	I	<u>Woodpecker, red-cockaded</u>	Picoides borealis		BOVA
010032	FESE	II	<u>Sturgeon, Atlantic</u>	Acipenser oxyrinchus		BOVA
010347	SE	I	<u>Sunfish, blackbanded</u>	Enneacanthus chaetodon		Habitat
040129	ST	I	<u>Sandpiper, upland</u>	Bartramia longicauda		BOVA
040293	ST	I	<u>Shrike, loggerhead</u>	Lanius ludovicianus		BOVA
040385	ST	I	<u>Sparrow, Bachman's</u>	Aimophila aestivalis		BOVA
040292	ST		<u>Shrike, migrant loggerhead</u>	Lanius ludovicianus migrans		BOVA
040093	FS	II	<u>Eagle, bald</u>	Haliaeetus leucocephalus		BOVA
070105	FS	III	<u>Crayfish, Chowanoke</u>	Orconectes virginienensis		BOVA
030063	CC	III	<u>Turtle, spotted</u>	Clemmys guttata		BOVA
010077		I	<u>Shiner, bridle</u>	Notropis bifrenatus		BOVA
040225		I	<u>Sapsucker, yellow-bellied</u>	Sphyrapicus varius		BOVA

040319		I	<u>Warbler, black-throated green</u>	Dendroica virens	BOVA
010174		II	<u>Bass, Roanoke</u>	Ambloplites cavifrons	BOVA,Habitat
040052		II	<u>Duck, American black</u>	Anas rubripes	BOVA
040105		II	<u>Rail, king</u>	Rallus elegans	BOVA
040320		II	<u>Warbler, cerulean</u>	Dendroica cerulea	BOVA
040266		II	<u>Wren, winter</u>	Troglodytes troglodytes	BOVA
020022		III	<u>Waterdog, dwarf</u>	Necturus punctatus	BOVA

To view **All 388 species** [View 388](#)

* FE=Federal Endangered; FT=Federal Threatened; SE=State Endangered; ST=State Threatened; FP=Federal Proposed; FC=Federal Candidate; FS=Federal Species of Concern; CC=Collection Concern

** I=VA Wildlife Action Plan - Tier I - Critical Conservation Need; II=VA Wildlife Action Plan - Tier II - Very High Conservation Need; III=VA Wildlife Action Plan - Tier III - High Conservation Need; IV=VA Wildlife Action Plan - Tier IV - Moderate Conservation Need

Bat Colonies or Hibernacula: Not Known

Anadromous Fish Use Streams

N/A

Colonial Water Bird Survey

N/A

Threatened and Endangered Waters

N/A

Managed Trout Streams ^{N/A}

Bald Eagle Concentration Areas and Roosts

N/A

Bald Eagle Nests

N/A

Habitat Predicted for Aquatic WAP Tier I & II Species

(5 Reaches)

[View Map Combined Reaches from Below of Habitat Predicted for WAP Tier I & II Aquatic Species](#)

Stream Name	Tier Species						View Map
	Highest TE [*]	BOVA Code, Status [*] , Tier ^{**} , Common & Scientific Name					
Rowanty Creek (03010201)	FESE	010174		II	<u>Bass, Roanoke</u>	Ambloplites cavifrons	<u>Yes</u>
		010214	FESE	I	<u>Logperch, Roanoke</u>	Percina rex	
		010347	SE	I	<u>Sunfish, blackbanded</u>	Enneacanthus chaetodon	
Rowanty Creek (03010201)	FESE	010174		II	<u>Bass, Roanoke</u>	Ambloplites cavifrons	<u>Yes</u>
		010214	FESE	I	<u>Logperch, Roanoke</u>	Percina rex	
(03010201)	SE	010347	SE	I	<u>Sunfish, blackbanded</u>	Enneacanthus chaetodon	<u>Yes</u>
Picture Branch							

(03010201)	SE	010347	SE	I	<u>Sunfish,</u> <u>blackbanded</u>	Enneacanthus chaetodon	<u>Yes</u>
Rowanty Creek (03010201)	SE	010347	SE	I	<u>Sunfish,</u> <u>blackbanded</u>	Enneacanthus chaetodon	<u>Yes</u>

Habitat Predicted for Terrestrial WAP Tier I & II Species

N/A

Public Holdings: (1 names)

Name	Agency	Level
Fort Lee Recreation Area	U.S. Dept. of Army	Federal

Compiled on 1/28/2013, 11:02:16 AM I444230.0 report=IPA searchType= R dist= 3218 poi= 37,09,12.0 77,31,01.0

PixelSize=64; Anadromous=0.034266; BECAR=0.033718; Bats=0.023697; Buffer=0.180537; County=0.093239; Impediments=0.026643; Init=0.216536; PublicLands=0.043247; SppObs=0.837309; TEWaters=0.05083; TierReaches=0.137024; TierTerrestrial=0.225939; Total=1.761148; Trout=0.036927

**Tier Reaches Group
Rowanty Creek
(03010201)**

37,09,12.0 -77,31,01.0
is the Search Point

Display at center	Item Location is not at map center
-------------------------	---

Show Position Rings

Yes No

1 mile and 1/4 mile at the
Search Point

Show Search Area

Yes No

2 Search distance miles
radius

**Search Point is at map
center**




Base Map Choices

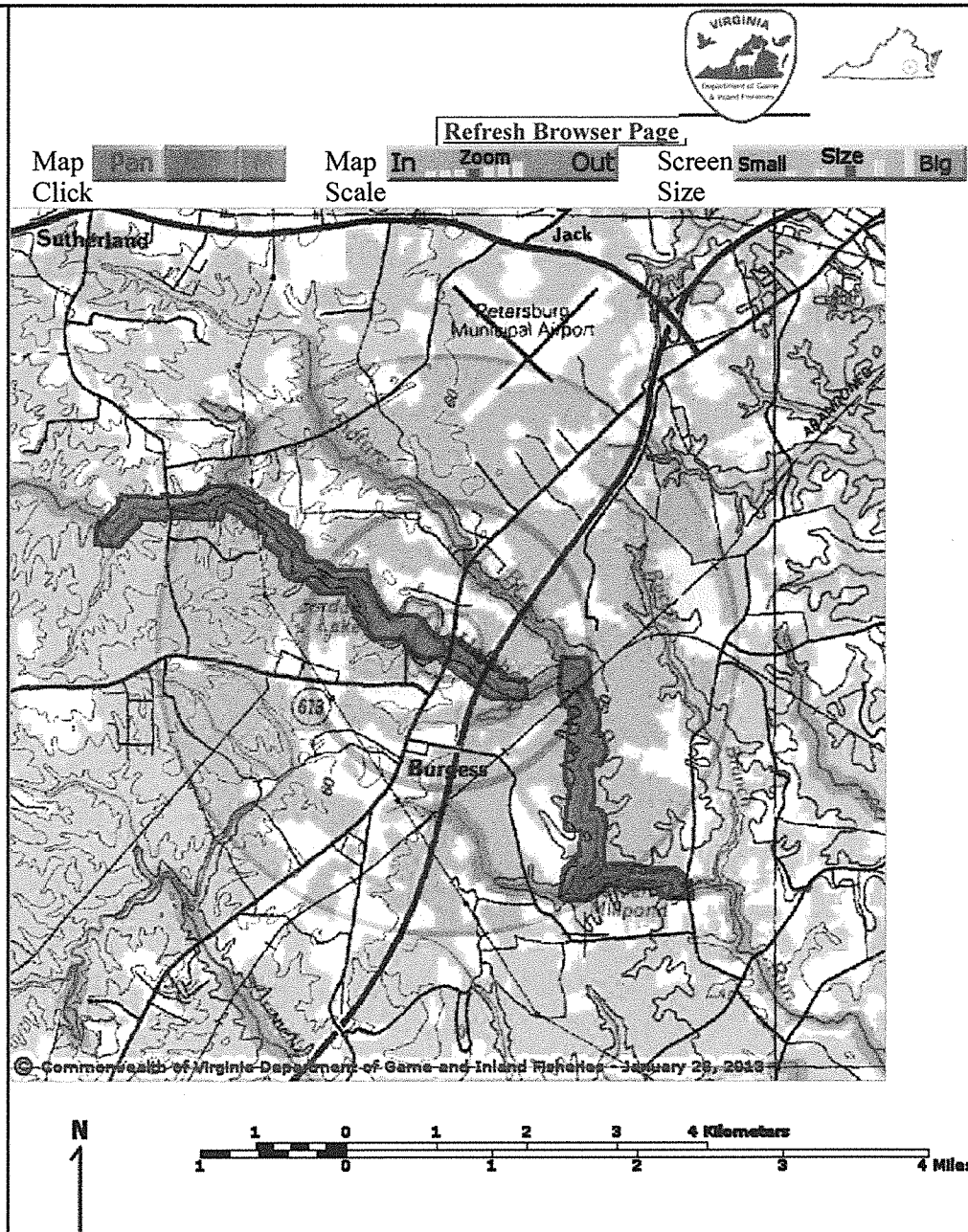
Topography ☒

Map Overlay Choices

Current List: Position, Search,
Observation

Map Overlay Legend

-  **Position Rings**
1 mile and 1/4
mile at the
Search Point
-  **2 mile radius
Search Area**
-  **Data
Observation Site**



Point of Search 37,09,12.0 -77,31,01.0

Map Location 37,09,12.0 -77,31,01.0

Select **Coordinate System:** Degrees, Minutes, Seconds Latitude - Longitude
Decimal Degrees Latitude - Longitude
Meters UTM NAD83 East North Zone
Meters UTM NAD27 East North Zone

Base Map source: USGS 1:100,000 topographic maps (see Microsoft.terraser.com for details)

Map projection is UTM Zone 18 NAD 1983 with left 271685 and top 4119648. Pixel size is 16 meters. Coordinates displayed are Degrees, Minutes, Seconds North and West. Map is currently displayed as 600 columns by 600 rows for a total of 360000 pixels. The map display represents 9600 meters east to west by 9600 meters north to south for a total of 92.1 square kilometers. The map display represents 31501 feet east to west by 31501 feet north to south for a total of 35.5 square miles.

Topographic maps and Black and white aerial photography for year 1990+-

are from the United States Department of the Interior, United States Geological Survey.

Color aerial photography aquired 2002 is from Virginia Base Mapping Program, Virginia Geographic Information Network.

Shaded topographic maps are from TOPO! ©2006 National Geographic
<http://www.national.geographic.com/topo>

All other map products are from the Commonwealth of Virginia
Department of Game and Inland Fisheries.

map assembled 2013-01-28 11:04:12 (qa/qc December 5, 2012 8:04 -
tn=444230.0 dist=3218 I)

\$poi=37.1533333 -77.5169444

| [DGIF](#) | [Credits](#) | [Disclaimer](#) | Contact shirl.dressler@dgif.virginia.gov | Please view our [privacy policy](#) |

© 1998- 2013 Commonwealth of Virginia Department of Game and Inland Fisheries

L. Preston Bryant, Jr.
Secretary of Natural Resources



Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

217 Governor Street
Richmond, Virginia 23219-2010
(804) 786-7951 FAX (804) 371-2674

April 1, 2008

Jaime Bauer
DEQ – Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: VA0092274 Rohoic Creek WWTP

Dear Ms. Bauer:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

According to the information currently in our files, Hatcher Run – Jordan Lake Stream Conservation Unit (SCU) is within the project site. SCUs are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. They are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. SCUs are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. The Hatcher Run – Jordan Lake SCU has been given a biodiversity significance ranking of B4, which represents a site of moderate significance. The natural heritage resource associated with this SCU is:

Orconectes virginienensis

Chowanoke crayfish

G3/S2S3/NL/NL

Chowanoke crayfish inhabit medium-sized rivers and creeks that flow through woodlands in the Chowan River system. They can be found in areas with low gradients and a sand or sparse gravel substrate (TNC, 1996).

Due to the potential for this site to support populations of the Chowanoke crayfish, DCR recommends an inventory for the resource in the study area. DCR recommends surveying 200 meters down from the outfall and up to the spillway. With the survey results we can more accurately evaluate potential impacts to natural heritage resources and offer specific protection recommendations for minimizing impacts to the documented resources.

Our files do not indicate the presence of any State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

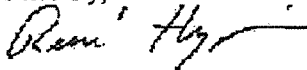
Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the Virginia Department of Conservation and Recreation (DCR), DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

New and updated information is continually added to Biotics. Please contact DCR for an update on this natural heritage information if a significant amount of time passes before it is utilized.

The Virginia Department of Game and Inland Fisheries maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters, that may contain information not documented in this letter. Their database may be accessed from www.dgif.virginia.gov/wildlife/info map/index.html, or contact Shirl Dressler at (804) 367-6913.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

A handwritten signature in dark ink, appearing to read "S. Rene' Hypes", with a stylized flourish at the end.

S. Rene' Hypes
Project Review Coordinator

Literature Cited

The Nature Conservancy. 1996. Biological and Conservation Data System. Arlington, Virginia, USA.

Bauer,Jaime

From: Hypes, Rene (DCR)
Sent: Tuesday, April 01, 2008 2:32 PM
To: Bauer,Jaime
Cc: MacQuilliam, Maggi (DCR)
Subject: RE: Comments for VA0092274 Rohoic Creek WWTP

Jamie,

That is correct the Chowanoke crayfish is a non-listed species. The VA Natural Heritage program is charged with conserving biodiversity in the Commonwealth which includes rare, threatened and endangered species and significant communities. We are hopeful that commenting on rare species in a proactive way will keep those species from becoming listed.

Rene'

S. Rene' Hypes
Project Review Coordinator
DCR-DNH
217 Governor Street
Richmond, Virginia 23219
804-371-2708 (phone)
804-371-2674 (fax)
Rene.Hypes@dcr.virginia.gov

>>> "Bauer,Jaime" <jlbauer@deq.virginia.gov> 04/01/08 2:07 PM >>>

I received the DCR comments regarding VA0092274 - Rohoic Creek WWTP. The comments document that the Chowanoke crayfish may be present in the area of the discharge; however, it appears as though the species is no listed as threatened or endangered on the federal or state list.

If you have any further questions, regarding this project, please let me know.

Jaime Bauer

~~~~~  
Jaime L. Bauer  
VPDES/VPA Permit Writer  
DEQ-Piedmont Regional Office  
804-527-5015

-----Original Message-----

From: nhreview nhreview [mailto:nhreview.po-richmond.dom-richmond@dcr.virginia.gov]  
Sent: Tuesday, April 01, 2008 12:15 PM  
To: Bauer,Jaime  
Subject: Comments for VA0092274 Rohoic Creek WWTP

Dear Ms. Bauerl,

Please find attached the DCR-DNH comments for the above referenced projects. The comments are in pdf format and can be printed for your records. Also species rank information is available at [http://www.dcr.virginia.gov/natural\\_heritage/help.shtml](http://www.dcr.virginia.gov/natural_heritage/help.shtml) for your reference.

Please send a confirmation e-mail upon receipt of our comments. Let us know if you have any questions.

Thank you for your request.

## ATTACHMENT 9

### EPA Checklist



**State "Transmittal Checklist" to Assist in Targeting  
Municipal and Industrial Individual NPDES Draft Permits for Review**

**Part I. State Draft Permit Submission Checklist**

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name: Rohoic Creek Wastewater Treatment Plant

NPDES Permit Number: VA0092274

Permit Writer Name: Fred M. Wyatt

Date: February 19, 2013

Major ☒ [X]Minor ☐ [ ]Industrial ☐ [ ]Municipal ☒ [X]

**I.A. Draft Permit Package Submittal Includes:**

|                                                                                                                | Yes | No | N/A |
|----------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Permit Application?                                                                                         | X   |    |     |
| 2. Complete Draft Permit (for renewal or first time permit– entire permit, including boilerplate information)? | X   |    |     |
| 3. Copy of Public Notice?                                                                                      |     | X  |     |
| 4. Complete Fact Sheet?                                                                                        | X   |    |     |
| 5. A Priority Pollutant Screening to determine parameters of concern?                                          |     | X  |     |
| 6. A Reasonable Potential analysis showing calculated WQBELs?                                                  |     | X  |     |
| 7. Dissolved Oxygen calculations?                                                                              | X   |    |     |
| 8. Whole Effluent Toxicity Test summary and analysis?                                                          |     | X  |     |
| 9. Permit Rating Sheet for new or modified industrial facilities?                                              |     |    | X   |

**I.B. Permit/Facility Characteristics**

|                                                                                                                                                                                   | Yes | No | N/A |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Is this a new, or currently unpermitted facility?                                                                                                                              |     | X  |     |
| 2. Are all permissible outfalls (including combined sewer overflow points, non process water and storm water) from the facility properly identified and authorized in the permit? | X   |    |     |
| 3. Does the fact sheet or permit contain a description of the wastewater treatment process?                                                                                       | X   |    |     |

| I.B. Permit/Facility Characteristics– cont.                                                                                                                                                                 | Yes | No | N/A |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 4. Does the review of PCS/DMR data for atleast the last 3 years indicate significant non-compliance with the existing permit?                                                                               |     |    | X   |
| 5. Has there been any change in streamflow characteristics since the last permit was developed?                                                                                                             |     | X  |     |
| 6. Does the permit allow the discharge of new or increased badings of any pollutants?                                                                                                                       |     |    | X   |
| 7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses? | X   |    |     |
| 8. Does the facility discharge to a 303(d) listed water?                                                                                                                                                    |     | X  |     |
| a. Has a TMDL been developed and approved by EPA for the impaired water?                                                                                                                                    |     |    | X   |
| b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?                                                        |     |    | X   |
| c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?                                                                                                        |     |    | X   |
| 9. Have any limits been removed, or are any limits less stringent, than those in the current permit?                                                                                                        |     | X  |     |
| 10. Does the permit authorize discharges of storm water?                                                                                                                                                    |     | X  |     |
| 11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?                                                                                     |     |    | X   |
| 12. Are there any production-based, technology-based effluent limits in the permit?                                                                                                                         | X   |    |     |
| 13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?                                                                                         |     | X  |     |
| 14. Are any WQBELs based on an interpretation of narrative criteria?                                                                                                                                        |     | X  |     |
| 15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?                                                                                                  |     | X  |     |
| 16. Does the permit contain a compliance schedule for any limit or condition?                                                                                                                               |     |    | X   |
| 17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?                                                                                           |     | X  |     |
| 18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?                                                                                                                 | X   |    |     |
| 19. Is there any indication that there is significant public interest in the permit action proposed for this facility?                                                                                      |     | X  |     |
| 20. Have previous permit, application, and fact sheet been examined?                                                                                                                                        | X   |    |     |

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

#### II.A. Permit Cover Page/Administration

|                                                                                                                                                           | Yes | No | N/A |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)? | X   |    |     |
| 2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?                                                | X   |    |     |

#### II.B. Effluent Limits– General Elements

|                                                                                                                                                                                                      | Yes | No | N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? | X   |    |     |
| 2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?                                         |     |    | X   |

#### II.C. Technology-Based Effluent Limits (POTWs)

|                                                                                                                                                                                                                    | Yes | No | N/A |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?                                                                                | X   |    |     |
| 2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?                                                         | X   |    |     |
| a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved? |     |    | X   |
| 3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?                                                                                               | X   |    |     |
| 4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?                                                                    | X   |    |     |
| 5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30day average and 45 mg/l BOD5 and TSS for a 7-day average)?               |     | X  |     |
| a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?                                                                         |     |    | X   |

#### II.D. Water Quality-Based Effluent Limits

|                                                                                                                                                      | Yes | No | N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality? | X   |    |     |
| 2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?                                                 |     | X  |     |

| <b>II.D. Water Quality-Based Effluent Limits – cont.</b>                                                                                                                                                  | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 3. Does the fact sheet provide effluent characteristics for each outfall?                                                                                                                                 | X          |           |            |
| 4. Does the fact sheet document that a “reasonable potential” evaluation was performed?                                                                                                                   | X          |           |            |
| a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?                                                      | X          |           |            |
| b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?                                                                                                | X          |           |            |
| c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?                                                                              | X          |           |            |
| d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)? | X          |           |            |
| e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?                                                                                    | X          |           |            |
| 5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?                                                                                  | X          |           |            |
| 6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?                                                                                                                   | X          |           |            |
| 7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?                                                                                                     | X          |           |            |
| 8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?                                                                | X          |           |            |

| <b>II.E. Monitoring and Reporting Requirements</b>                                                                                                                     | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?                    | X          |           |            |
| a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?   |            |           |            |
| 2. Does the permit identify the physical location where monitoring is to be performed for each outfall?                                                                | X          |           |            |
| 3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements? |            | X         |            |
| 4. Does the permit require testing for Whole Effluent Toxicity?                                                                                                        | X          |           |            |

| <b>II.F. Special Conditions</b>                                             | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|-----------------------------------------------------------------------------|------------|-----------|------------|
| 1. Does the permit include appropriate biosolids use/disposal requirements? | X          |           |            |
| 2. Does the permit include appropriate storm water program requirements?    |            |           | X          |

| II.F. Special Conditions – cont.                                                                                                                                                                | Yes | No | N/A |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?                                                                 |     |    | X   |
| 4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?                                             | X   |    |     |
| 5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]? |     | X  |     |
| 6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?                                                                                                                   |     | X  |     |
| a. Does the permit require implementation of the “Nine Minimum Controls”?                                                                                                                       |     |    | X   |
| b. Does the permit require development and implementation of a “Long Term Control Plan”?                                                                                                        |     |    | X   |
| c. Does the permit require monitoring and reporting for CSO events?                                                                                                                             |     |    | X   |
| 7. Does the permit include appropriate Pretreatment Program requirements?                                                                                                                       | X   |    |     |

| II.G. Standard Conditions                                                                                                                                                                                                           | Yes                         | No                        | N/A |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----|
| 1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?                                                                                                     | X                           |                           |     |
| <b>List of Standard Conditions – 40 CFR 122.41</b>                                                                                                                                                                                  |                             |                           |     |
| Duty to comply                                                                                                                                                                                                                      | Property rights             | Reporting Requirements    |     |
| Duty to reapply                                                                                                                                                                                                                     | Duty to provide information | Planned change            |     |
| Need to halt or reduce activity                                                                                                                                                                                                     | Inspections and entry       | Anticipated noncompliance |     |
| not a defense                                                                                                                                                                                                                       | Monitoring and records      | Transfers                 |     |
| Duty to mitigate                                                                                                                                                                                                                    | Signatory requirement       | Monitoring reports        |     |
| Proper O & M                                                                                                                                                                                                                        | Bypass                      | Compliance schedules      |     |
| Permit actions                                                                                                                                                                                                                      | Upset                       | 24-Hour reporting         |     |
|                                                                                                                                                                                                                                     |                             | Other non-compliance      |     |
| 2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]? | X                           |                           |     |

## Part II. NPDES Draft Permit Checklist

### Region III NPDES Permit Quality Review Checklist – For Non-Municipals (To be completed and included in the record for all non-POTWs)

#### II.A. Permit Cover Page/Administration

|                                                                                                                                                           | Yes | No | N/A |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)? |     |    |     |
| 2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?                                                |     |    |     |

#### II.B. Effluent Limits– General Elements

|                                                                                                                                                                                                      | Yes | No | N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)? |     |    |     |
| 2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?                                         |     |    |     |

#### II.C. Technology-Based Effluent Limits (Effluent Guidelines & BPJ)

|                                                                                                                                                                                                | Yes | No | N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|-----|
| 1. Is the facility subject to a national effluent limitations guideline (ELG)?                                                                                                                 |     |    |     |
| a. If yes, does the record adequately document the categorization process, including an evaluation of whether the facility is a new source or an existing source?                              |     |    |     |
| b. If no, does the record indicate that a technology-based analysis based on Best Professional Judgement (BPJ) was used for all pollutants of concern discharged at treatable concentrations?  |     |    |     |
| 2. For all limits developed based on BPJ, does the record indicate that the limits are consistent with the criteria established at 40 CFR 125.3(d)?                                            |     |    |     |
| 3. Does the fact sheet adequately document the calculations used to develop both ELG and /or BPJ technology-based effluent limits?                                                             |     |    |     |
| 4. For all limits that are based on production or flow, does the record indicate that the calculations are based on a “reasonable measure of ACTUAL production” for the facility (not design)? |     |    |     |
| 5. Does the permit contain “tiered” limits that reflect projected increases in production or flow?                                                                                             |     |    |     |
| a. If yes, does the permit require the facility to notify the permitting authority when alternate levels of production or flow are attained?                                                   |     |    |     |
| 6. Are technology-based permit limits expressed in appropriate units of measure (e.g., concentration, mass, SU)?                                                                               |     |    |     |

| <b>II.C. Technology-Based Effluent Limits (Effluent Guidelines &amp; BPJ)– cont.</b>                                        | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|-----------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 7. Are all technology-based limits expressed in terms of both maximum daily, weekly average, and/or monthly average limits? |            |           |            |
| 8. Are any final limits less stringent than required by applicable effluent limitations guidelines or BPJ?                  |            |           |            |

| <b>II.D. Water Quality-Based Effluent Limits</b>                                                                                                                                                                                   | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?                                                                               |            |           |            |
| 2. Does the record indicate that any WQBELs were derived from a completed and EPA approved TMDL?                                                                                                                                   |            |           |            |
| 3. Does the fact sheet provide effluent characteristics for each outfall?                                                                                                                                                          |            |           |            |
| 4. Does the fact sheet document that a “reasonable potential” evaluation was performed?                                                                                                                                            |            |           |            |
| a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?                                                                               |            |           |            |
| b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?                                                                                                                         |            |           |            |
| c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?                                                                                                       |            |           |            |
| d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations where data are available)? |            |           |            |
| e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?                                                                                                             |            |           |            |
| 5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?                                                                                                           |            |           |            |
| 6. For all final WQBELs, are BOTH long-term (e.g., average monthly) AND short term (e.g., maximum daily, weekly average, instantaneous) effluent limits established?                                                               |            |           |            |
| 7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?                                                                                                                              |            |           |            |
| 8. Does the fact sheet indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?                                                                                     |            |           |            |

| <b>II.E. Monitoring and Reporting Requirements</b>                                                                                                                   | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 1. Does the permit require at least annual monitoring for all limited parameters?                                                                                    |            |           |            |
| a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver? |            |           |            |
| 2. Does the permit identify the physical location where monitoring is to be performed for each outfall?                                                              |            |           |            |
| 3. Does the permit require testing for Whole Effluent Toxicity in accordance with the State's standard practices?                                                    |            |           |            |


| <b>II.F. Special Conditions</b>                                                                                                                     | <b>Yes</b> | <b>No</b> | <b>N/A</b> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------------|-----------|------------|
| 1. Does the permit require development and implementation of a Best Management Practices (BMP) plan or site-specific BMPs?                          |            |           |            |
| a. If yes, does the permit adequately incorporate and require compliance with the BMPs?                                                             |            |           |            |
| 2. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?                     |            |           |            |
| 3. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations? |            |           |            |

| II.G. Standard Conditions                                                                                                                                                                                              | Yes                         | No                        | N/A |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------|-----|
| 1. Does the <b>permit</b> contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?                                                                                        |                             |                           |     |
| <b>List of Standard Conditions – 40 CFR 122.41</b>                                                                                                                                                                     |                             |                           |     |
| Duty to comply                                                                                                                                                                                                         | Property rights             | Reporting Requirements    |     |
| Duty to reapply                                                                                                                                                                                                        | Duty to provide information | Planned change            |     |
| Need to halt or reduce activity                                                                                                                                                                                        | Inspections and entry       | Anticipated noncompliance |     |
| not a defense                                                                                                                                                                                                          | Monitoring and records      | Transfers                 |     |
| Duty to mitigate                                                                                                                                                                                                       | Signatory requirement       | Monitoring reports        |     |
| Proper O & M                                                                                                                                                                                                           | Bypass                      | Compliance schedules      |     |
| Permit actions                                                                                                                                                                                                         | Upset                       | 24-Hour reporting         |     |
|                                                                                                                                                                                                                        |                             | Other non-compliance      |     |
| 2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for existing non-municipal dischargers regarding pollutant notification levels [40 CFR 122.42(a)]? |                             |                           |     |



### Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

|           |                                                                                           |
|-----------|-------------------------------------------------------------------------------------------|
| Name      | <u>Fred M. Wyatt</u>                                                                      |
| Title     | <u>Environmental Specialist</u>                                                           |
| Signature | <u></u> |
| Date      | <u>02/19/2013</u>                                                                         |